

SEQUENCE LISTING

<110> Medical Research Council

<120> Obesity gene

<130> 18396/1140

<140> 08/484,629

<141> 2000-01-18

<150> PCT/GB99/02658

<151> 1998-12-08

<160> 37

<170> PatentIn version 3.0

<210> 1

<211> 924

<212> DNA

<213> Rattus sp.

<400> 1

tgtcatgttg cgggctttga accgcctggc cgcgcggccc gggggccagc ccccaaccct

60

gctccttctg cccgtgcgcg gccgcaagac ccgccacgat ccgcctgcca agtccaaggt

120

RECEIVED

SEP 2 6 2003

TECH CENTER 1600/

cgggcgcgtg aaaatgcctc ctgcagtgga ccctgcggaa ttgttcgtgt tgaccgagcg	180
ctaccgacag taccgggaga cggtgcgcgc tctcaggcga gagttcacat tggaggtgcg	240
agggaaattg cacgaggccc gagccggggt tctggctgag cgcaaggcgc aagaggccat	300
cagagagcac caggagctga tggcctggaa ccgggaggag aaccggagac tgcaggaact	360
acggatagct aggttgcagc tcgaagcaca ggcccaggag ctgcggcagg ctgaggtcca	420
ggcccagagg gcccaggagg agcaggcttg ggtgcaactg aaagaacaag aagttctcaa	480
actgcaggag gaggccaaaa acttcatcac tcgggagaac ctggaggcac ggatagaaga	540
ggccttggac tctccgaaga gttataactg ggcggtcacc aaagaagggc aggtggtcag	600
gaactgagaa cagaggcctc tcaggcccaa ataaggacag tgcttgccta gggactggat	660
attggggtag aaattggtgc atcccaggag ggtggcacag ccttgtccag agcagccccc	720
attcattcta gatttggcac caggtatagt acctgttctg acaccacata caaactccgg	780
acagcattaa actetgggaa gtteetatea eacagaagat eagaetggae tgteeeetet	840
agaagccaag agctgtctcc tgagtttctt ggaatagtgt gagcccaatg tttcctgctt	900
ttataaataa actattggaa agca	924

```
<211> 200
<212> PRT
<213> Rattus sp.
<400> 2
Met Leu Arg Ala Leu Asn Arg Leu Ala Ala Arg Pro Gly Gln Pro
                                                        15
                                    10
                5
1
Pro Thr Leu Leu Leu Pro Val Arg Gly Arg Leu Thr Arg His Asp
                                                    30
                                25
            20
Pro Pro Ala Leu Ser Leu Val Gly Arg Val Leu Met Pro Pro Ala Val
                                                 45
                             40
        35
Asp Pro Ala Glu Leu Phe Val Leu Thr Glu Arg Tyr Arg Gln Tyr Arg
                                             60
                         55
     50
 Glu Thr Val Arg Ala Leu Arg Arg Glu Phe Thr Leu Glu Val Arg Gly
                                                             80
                                         75
                     70
 65
 Lys Leu His Glu Ala Arg Ala Gly Val Leu Ala Glu Arg Lys Ala Gln
                                                         95
                                     90
                 85
 Glu Ala Ile Arg Glu His Gln Glu Leu Met Ala Trp Asn Arg Glu Glu
                                 105
                                                     110
             100
```

Asn	Arg	Arg	Leu	Gln	Glu	Leu	Arg	Ile	Ala	Arg	Leu	Gln	Leu	Glu	Ala	
		115					120					125				
Gln	Ala	Gln	Glu	Leu	Arg	Gln	Ala	Glu	Val	Gln	Ala	Gln	Arg	Ala	Gln	
	130					135					140					
Glu	Glu	Gln	Ala	Trp	Val	Gln	Leu	Lys	Glu	Gln	Glu	Val	Leu	Lys	Leu	
145					150					155					160	
											_	_	a1	23-	D war	
Gln	Glu	Glu	Ala			Phe	Ile	Thr			Asn	Leu	Glu		Arg	
				165					170					175		
							_	-	0	· [[]o ===	7.00	· Trn	ר א	V a l	Thr	
Ile	Glu	Glu			Asp	Ser	Pro			Tyr	ASI	ıırp	190		Thr	
			180					185	•				190			
				7		3										
Lys	Glu			ı Val	. Val	. Arg										
		195	•				200	,								
0.1	•	2														
<21		3														
		998 DNA														
			tus s	an.												
\Z]		Rac	cub .	JP.												
-41	00>	3														
			cac.	tgag	ccq (cctg	ggcg	cg g	ggac	cccg	t gc	aggc	cccg	ggc	ccctctg	60
۵٠;	,	- 5-3	٠ ٦ ٠	, ,	J	,		_ ~								
gte	gctg	ccag	cgc	gcgg	ccg	caag	accc	gc c	acga	cccg	c tg	gcca	aatc	caa	gatcgag	120

cgagtgaaca tgccgcccgc ggtggaccct gcggagttct tcgtgctgat ggagcgttac	180
cagcactacc gccagaccgt gcgcgccctc aggatggagt tcgtgtccga ggtgcagagg	240
aaggtgcacg aggcccgagc cggggttctg gcggagcgca aggccctgaa ggacgccgcc	300
gagcaccgcg agctgatggc ctggaaccag gcggagaacc ggcggctgca cgagctgcgg	360
atagcgaggc tgcggcagga ggagcgggag caggagcagc ggcaggcgtt ggagcaggcc	420
cgcaaggccg aagaggtgca ggcctgggcg cagcgcaagg agcgggaagt gctgcagctg	480
caggaagagg tgaaaaactt catcacccga gagaacctgg aggcacgggt ggaagcagca	540
ttggactccc ggaagaacta caactgggcc atcaccagag aggggctggt ggtcaggcca	600
caacgcaggg actcctaggg gcccagtaag gacagtgccc gccagggacc atgtatgtat	660
catggcggaa gagttggccc tgacctggaa taaagcagtt ggtgttgctt atgaggaagg	720
ttcagcctta tccagcacag ccttcacgtt ttgccctctg ctgtcaccac ttggtcagaa	780
acttccaaac gcagtgccct gttctgccgg tgtgtaaagc ctcagcgcac caggagaccc	840
tagagtggtt tccatctcac agagaatcag acaggccaca gccccctcag gcagccaggt	900
catctgagta tcattaagag tagtgatggg aagattacag tctgagggcc aaacgtgcct	960

<211> 205

<212> PRT

<213> Rattus sp.

<400> 4

Met Leu Arg Ala Leu Ser Arg Leu Gly Ala Gly Thr Pro Cys Arg Pro 1 5 10 15

Arg Ala Pro Leu Val Leu Pro Ala Arg Gly Arg Lys Thr Arg His Asp

Pro Leu Ala Lys Ser Lys Ile Glu Arg Val Asn Met Pro Pro Ala Val

Asp Pro Ala Glu Phe Phe Val Leu Met Glu Arg Tyr Gln His Tyr Arg

Gln Thr Val Arg Ala Leu Arg Met Glu Phe Val Ser Glu Val Gln Arg
65 70 75 80

Lys Val His Glu Ala Arg Ala Gly Val Leu Ala Glu Arg Lys Ala Leu

Lys Asp Ala Ala Glu His Arg Glu Leu Met Ala Trp Asn Gln Ala Glu
100 105 110

Asn Arg Arg Leu His Glu Leu Arg Ile Ala Arg Leu Arg Gln Glu Glu
115 120 125

Arg Glu Gln Glu Gln Arg Gln Ala Leu Glu Gln Ala Arg Lys Ala Glu 130 135 140

Glu Val Gln Ala Trp Ala Gln Arg Lys Glu Arg Glu Val Leu Gln Leu 145 150 155 160

Gln Glu Glu Val Lys Asn Phe Ile Thr Arg Glu Asn Leu Glu Ala Arg

Val Glu Ala Ala Leu Asp Ser Arg Lys Asn Tyr Asn Trp Ala Ile Thr

Arg Glu Gly Leu Val Val Arg Pro Gln Arg Arg Asp Ser

<210> 5

<211> 943

<212> DNA

<213> Mus musculus

tgtcatgttg cgcgctctga accgcctggc gc	ageggeeg g	ggagaccggc	cccgacccc	60
gctgctcctg cccgtgcgcg gccgcaagac cc	gccatgac (ccgcctgcca	aatccaaggt	120
cggacgggtg cagacgcctc ccgccgtgga cc	ctgcggaa	ttettegtgt	tgaccgagcg	180
ctacggacag taccgggaga ccgtgcgcgc tc	ctcaggcta	gagttcacgt	tggatgtgcg	240
aaggaaattg cacgaggccc gagccggggt to	ctggccgag	cgcaaggcgc	agcaggccat	300
cacggagcac cgggagctga tggcctggaa co	cgggacgag	aaccggcgaa	tgcaggagct	360
acggatagcg aggttgcagc tggaagcaca gg	gcccaggag	gtgcagaagg	ctgaggccca	420
gcgccagagg gctcaggagg agcaggcttg gg	gtgcaactg	aaagagcaag	aagtgctcaa	480
gctgcaggag gaggcaaaaa acttcatcac to	cgggagaac	ctggaggcac	ggatagaaga	540
agcgttggac tctccgaaga gttacaactg g	gccgtcacc	aaagaagggc	aggtggtcag	600
gaactgagca cagagacttc tgggggccca a	ataagcaca	gtgcttgcct	agggtetgtg	660
tactgggata ggaattggta catcccagga g	ggatggetea	gccgtttcca	a gagcaacctc	720
agtcactcca ggctcggcac tcaccacctg a	actgggaact	cccagatgto	c cetgttetgg	780
caccacagtc aaactgaggg cagcattaaa c	ctctgggaag	ttcctatcg	c acagaggatc	840

agccaaatgt ttcctgcttt tataaataaa gtattggagc cca

943

<210> 6

<211> 200

<212> PRT

<213> Mus musculus

<400> 6

Met Leu Arg Ala Leu Asn Arg Leu Ala Gln Arg Pro Gly Asp Arg Pro

1 5 10 15

Pro Thr Pro Leu Leu Pro Val Arg Gly Arg Lys Thr Arg His Asp

20 25 30

Pro Pro Ala Lys Ser Lys Val Gly Arg Val Gln Thr Pro Pro Ala Val

35 40 45

Asp Pro Ala Glu Phe Phe Val Leu Thr Glu Arg Tyr Gly Gln Tyr Arg

50 55 60

Glu Thr Val Arg Ala Leu Arg Leu Glu Phe Thr Leu Asp Val Arg Arg

65 70 75 80

Lys Leu His Glu Ala Arg Ala Gly Val Leu Ala Glu Arg Lys Ala Gln

Gln Ala Ile Thr Glu His Arg Glu Leu Met Ala Trp Asn Arg Asp Glu
100 105 110

Asn Arg Arg Met Gln Glu Leu Arg Ile Ala Arg Leu Gln Leu Glu Ala

Gln Ala Gln Glu Val Gln Lys Ala Glu Ala Gln Arg Gln Arg Ala Gln
130 135 140

Glu Glu Gln Ala Trp Val Gln Leu Lys Glu Gln Glu Val Leu Lys Leu 145 150 150 155 160

Gln Glu Glu Ala Lys Asn Phe Ile Thr Arg Glu Asn Leu Glu Ala Arg

Ile Glu Glu Ala Leu Asp Ser Pro Lys Ser Tyr Asn Trp Ala Val Thr

Lys Glu Gly Gln Val Val Arg Asn

195 200

<210> 7

<211> 2852

<212> DNA

<213> Homo sapiens

tgacctctgt	ggatctgata	tacatgtaag	tgacagacca	tccgagctat	atagtgagac	60
ctgtgcaagg	aaggatggag	tgcacgttcc	ctgatgttca	gagcaaccct	gtgtcactcc	120
aggtaggtga	gatgagagga	agagggtggc	cttggcctgg	gcctcctacg	ggcctggaag	180
ttgggagaag	gatgtaagca	gactctgttc	tcttctgaga	aatatcaggt	attgcagtca	240
gcccaggctc	ctcagaccct	cctaagtgca	gattctctgc	agaatctggt	gttgacaaca	300
ctaatgagta	ggatgagact	tcagttccct	agccctcacc	gtcagcttct	gattaccaac	360
aactctccca	gaggagagcc	atctaccttt	gggacagatg	ctctctgccc	tgcactgcct	420
cctgtttctc	ttcattgtag	aggaagatag	tactttaaaa	gcttcataaa	tggtctcaag	480
gtgggaagac	: cccggctcag	gtgaaagagg	acaagcgtca	cctcacacag	gccacccagt	540
agaaaacaag	g tgatcactga	tactgagaac	tctggcaatt	gcagagctgo	c ccaagaccac	600
aacagggcag	g tgcaatgcaa	a ggaaaaggtt	. tgttgctcga	ttgcaaacct	aaagtttaaa	660
gtgcatcagg	g agaacgctta	a ctcaaagagg	g aagtgtaago	c ctaacttaa	g tagctagaag	720
ctcagaatt	t cttgcatcag	g ccctggaagg	g gtacacaggo	c caccggtgg	g ccagagaacc	780
acacgcttt	g gggcggtgt	c caagettgtg	g aacaagtag	g caagagcgc	c tggtgttgta	840

gctgtcattg gcgggcaata c	agcccagcg	aactgtggtc	tccaaggtgc	ccctcgaccc	900
tcccactcta cccgagactc c	agggacgcg	atgggccaga	cagcaagagc	tccgcctacg	960
ggggcgggga caggagattc c	ccgtgatgct	cctcgaccac	ttccggacag	ggcgcaggcg	1020
ctagctgtca tgttgcgggc t	tttgaaccgc	ctggccgcgc	ggcccggggg	ccagccccca	1080
accetgetee ttetgeeegt o	gegeggeeca	cggccccgct	cattctcggc	tcctttttcc	1140
tcgcaggata gctaggttgc	agctcgaagc	acaggcccag	gagctgcggc	aggctgaggt	1200
ccaggcccag agggcccagg	aggagcaggc	ttgggtgcaa	ctgaaagaac	aagaagttct	1260
caaactgcag gtgggccgag	gtcgtgagga	atgtgggtat	tggagattcc	ggtgagggag	1320
gctctgggga gagcagcaca	gggtgtcaag	tgaccagtct	tcaggaggct	tetetetetg	1380
ctctgcacac acagagtgcc	tcccagacaa	tggtcaatga	aaggttacag	gctagtattg	1440
ccgtgtgaaa cttgaaggtc	agggaaacca	taaatgagaa	tggagetgtt	tttattgtgt	1500
aagggagagt gacaaggttg	agagagtcca	ccaccccgca	cctccccccg	ccccaatca	1560
ggttgtcacg attcgattcg	ttcttgggtt	gtggctgaga	a gatctgatgg	gtaattgtcc	1620
gaggaagagg gatataatgg	ttgaggtcad	c ctagtacag	tgtgctggcc	: tattggtggg	1680

acactcaaag g	ggccctggg	ctcttttgac	acccttctta	aggtgggcta	gagacagtaa	1740
gttatgcagg c	agccagctc	tgagagatcc	cacgtagcta	acctttctct	tcccgtagga	1800
ggaggccaaa a	acttcatca	ctcgggagaa	cctggaggca	cggatagaag	aggccttgga	1860
ctctccgaag a	agttataact	gggcggtcac	caaagaaggg	caggtggtca	ggaactgaga	1920
acagaggcct (ctcaggccca	aataaggaca	gtgcttgcct	agggactgga	tattggggta	1980
gaaattggtg (catcccagga	gggtggcaca	gccttgtcca	gagcagcccc	cattcattct	2040
agatttggca (ccaggtatag	tacctgttct	gacaccacat	acaaactccg	gacagcatta	2100
aactctggga	agttcctatc	acacagaaga	tcagactgga	ctgtcccctc	tagaagccaa	2160
gagetgtete	ctgagtttct	tggaatagtg	tgagcccaat	gtttcctgct	: tttataaata	2220
aactattgga	aagcaaagco	ttttgttatg	tggcttgctt	tttcttgttg	g tagaataagt	2280
ttatttgtcc	cagttatttg	ggtcttaagg	ttattagcc	a aaagccagtt	c cacctaactg	2340
agccaggagt	tagttatctg	g ctttgctcaa	a teetggget	t tgctgggtag	g ggtcaggtgt	2400
gtccaaggtc	cagaaagcaa	a aaagggtgco	c cegtttete	c tgggaaggc	t teccegteag	2460
tgatttctgt	aaccggacco	c tgccctgac	a cagcgtcat	t ggactaccc	a gcagacagta	2520

gactccactc taaaccc	get tettgeggte	agttgctgtc	cttcagtgtg	tgtaagcagt	2580
ggccagacag caccett	ggg tgtcatttca	agactctctc	accttggtct	gctttacgtt	2640
tggtttgatt tggtttg	ttc tggtttttga	gacgaggcct	ttcactggaa	cctggcactc	2700
agtatttaga ctgccca	gcc agctagccto	agagaatgca	tctgcgtatg	cttgcctggc	2760
gctggaattc ggtgcac	atg gctttgatgt	gtaccgggga	tcagacacag	atgtttcatg	2820
agtgcagtgc atgcctg	gtta gtggtagago	: tc			2852

<211> 41

<212> PRT

<213> Homo sapiens

<400> 8

Met Leu Arg Ala Leu Asn Arg Leu Ala Ala Arg Pro Gly Gly Gln Pro 1 5 10 15

Pro Thr Leu Leu Leu Pro Val Arg Gly Pro Arg Pro Arg Ser Phe
20 25 30

Ser Ala Pro Phe Ser Ser Gln Asp Ser

35 40

<210> 9

<211> 20

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(20)

<223> SYNTHETIC PRIMER

<400> 9

ttcacaccac tctgtcgaac

<210> 10

<211> 20

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

20

```
<220>
```

- <221> misc_feature
- <222> (1)..(20)
- <223> SYNTHETIC PRIMER

<400> 10

aggaggaaga caggtgaaag

20

- <210> 11
- <211> 20
- <212> DNA
- <213> Artificial
- <220>
- <223> SYNTHETIC PRIMER
- <220>
- <221> misc_feature
- <222> (1)..(20)
- <223> SYNTHETIC PRIMER
- <400> 11

tcatgttgcg ggctttgaac

20

```
<210> 12
```

<211> 20

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(20)

<223> SYNTHETIC PRIMER

<400> 12

tctttcagtt gcacccaagc

<210> 13

<211> 20

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

20

```
<222> (1)..(20)
```

<223> SYNTHETIC PRIMER

<400> 13

gtgataggaa cttcccagag

20

<210> 14

<211> 42

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(42)

<223> SYNTHETIC PRIMER

<400> 14

gcctcgtgca atttccctcg cacctccaat gtgaactctc gc

42

<210> 15

<211> 42

```
<212> DNA
<213> Artificial
<220>
<223> SYNTHETIC PRIMER
<220>
<221> misc_feature
<222> (1)..(42)
<223> SYNTHETIC PRIMER
<400> 15
                                                                      42
tcctgcgagg aaaaaggagc cgagaatgag cggggccgtg gg
 <210> 16
 <211> 3264
 <212> DNA
 <213> Rattus sp.
 <400> 16
 tgacctctgt ggatctgata tacatgtaag tgacagacca tccgagctat atagtgagac
                                                                      60
 ctgtgcaagg aaggatggag tgcacgttcc ctgatgttca gagcaaccct gtgtcactcc
                                                                     120
 aggtaggtga gatgagagga agagggtggc cttggcctgg gcctcctacg ggcctggaag
                                                                     180
```

ttgggagaag gatgtaagca	gactctgttc	tcttctgaga	aatatcaggt	attgcagtca	240
gcccaggctc ctcagaccct	cctaagtgca	gattctctgc	agaatctggt	gttgacaaca	300
ctaatgagta ggatgagact	tcagttccct	agccctcacc	gtcagcttct	gattaccaac	360
aactctccca gaggagagcc	atctaccttt	gggacagatg	ctctctgccc	tgcactgcct	420
cctgtttctc ttcattgtag	aggaagatag	tactttaaaa	gcttcataaa	tggtctcaag	480
gtgggaagac cccggctcag	gtgaaagagg	acaagcgtca	cctcacacag	gccacccagt	540
agaaaacaag tgatcactga	tactgagaac	tctggcaatt	gcagagctgo	ccaagaccac	600
aacagggcag tgcaatgcaa	ggaaaaggtt	tgttgctcga	ttgcaaacct	aaagtttaaa	660
gtgcatcagg agaacgctta	a ctcaaagagg	aagtgtaagc	ctaacttaag	g tagctagaag	720
ctcagaattt cttgcatcag	g ccctggaagg	g gtacacaggo	: caccggtgg	g ccagagaacc	780
acacgetttg gggeggtgte	caagcttgtg	g aacaagtagg	g caagagcgc	c tggtgttgta	840
gctgtcattg gcgggcaat	a cagcccagc	g aactgtggto	c tccaaggtg	c cectegacee	900
tcccactcta cccgagact	c cagggacgc	g atgggccag	a cagcaagag	c teegeetaeg	960
ggggcgggga caggagatt	c ccgtgatgc	t cctcgacca	c ttccggaca	g ggcgcaggcg	1020

ctagctgtca tgttgcgggc tttgaacc	ge etggeegege ggeeeggggg eeageeeeca	1080
accetgetee ttetgeeegt gegeggee	gc aagacccgcc acgatccgcc tgccaagtcc	1140
aaggtcgggc gcgtgaaaat gcctcctg	ca gtggaccctg cggaattgtt cgtgttgacc	1200
gagegetace gacagtaceg ggagaegg	tg cgcgctctca ggtgtgtgta aagggcaggc	1260
ggccttcggc gccccctggg aagtgctg	gg gctggaggat gggtgctcac ttgaagcccg	1320
teeteaceca ggegagagtt cacattgg	ag gtgcgaggga aattgcacga ggcccgagcc	1380
ggggttetgg etgagegeaa ggegeaag	gag gccatcagag agcaccagga gctgatggcc	1440
tggaaccggg aggagaaccg gagactgo	cag gaactacggt gcgagaggcg cggggctggg	1500
tgggctgggc taggctcacc cacggcc	ccg ctcattctcg gctccttttt cctcgcagga	1560
tagctaggtt gcagctcgaa gcacagg	ccc aggagetgeg geaggetgag gtecaggeee	1620
agagggccca ggaggagcag gcttggg	tgc aactgaaaga acaagaagtt ctcaaactgc	1680
aggtgggccg aggtcgtgag gaatgtg	ggt attggagatt ccggtgaggg aggctctggg	1740
gagagcagca cagggtgtca agtgacc	agt cttcaggagg cttctctctc tgctctgcac	1800
acacagagtg cctcccagac aatggtc	aat gaaaggttac aggctagtat tgccgtgtga	1860

aacttgaagg tcagggaaac cataaatgag aatggagctg tttttattgt gtaagggaga	1920
gtgacaaggt tgagagagtc caccaccccg cacctccccc cgcccccaat caggttgtca	1980
cgattcgatt cgttcttggg ttgtggctga gagatctgat gggtaattgt ccgaggaaga	2040
gggatataat ggttgaggtc acctagtaca gttgtgctgg cctattggtg ggacactcaa	2100
aggggccctg ggctcttttg acacccttct taaggtgggc tagagacagt aagttatgca	2160
ggcagccagc tctgagagat cccacgtagc taacctttct cttcccgtag gaggaggcca	2220
aaaacttcat cactcgggag aacctggagg cacggataga agaggccttg gactctccga	2280
agagttataa ctgggcggtc accaaagaag ggcaggtggt caggaactga gaacagaggc	2340
ctctcaggcc caaataagga cagtgcttgc ctagggactg gatattgggg tagaaattgg	2400
tgcatcccag gagggtggca cagccttgtc cagagcagcc cccattcatt ctagatttgg	2460
caccaggtat agtacctgtt ctgacaccac atacaaactc cggacagcat taaactctgg	2520
gaagtteeta teacacagaa gateagaetg gaetgteece tetagaagee aagagetgte	2580
tcctgagttt cttggaatag tgtgagccca atgtttcctg cttttataaa taaactattg	2640
gaaagcaaag ccttttgtta tgtggcttgc tttttcttgt tgtagaataa gtttatttgt	2700

cccagttatt	tgggtcttaa	ggttattagc	caaaagccag	ttcacctaac	tgagccagga	2760
gttagttatc	tgctttgctc	aatcctgggc	tttgctgggt	agggtcaggt	gtgtccaagg	2820
tccagaaagc	aaaaagggtg	ccccgtttct	cctgggaagg	cttccccgtc	agtgatttct	2880
gtaaccggac	cctgccctga	cacagcgtca	ttggactacc	cagcagacag	tagactccac	2940
tctaaacccg	cttcttgcgg	tcagttgctg	tccttcagtg	tgtgtaagca	gtggccagac	3000
agcacccttg	ggtgtcattt	caagactctc	tcaccttggt	ctgctttacg	tttggtttga	3060
tttggtttgt	tctggttttt	gagacgaggc	ctttcactgg	aacctggcac	tcagtattta	3120
gactgcccag	ccagctagcc	tcagagaatg	catctgcgta	tgcttgcctg	gcgctggaat	3180
tcggtgcaca	tggctttgat	gtgtaccggg	gatcagacac	agatgtttca	tgagtgcagt	3240
gcatgcctgt	: tagtggtaga	gete				3264

<211> 44576

<212> DNA

<213> Artificial

<220>

<223> COSMID DNA

<221> misc_feature

<222> (1)..(44576)

<223> COSMID DNA

<400> 17

geggeegeat	aatacgactc	actataggga	tctggtggag	gacctatggc	ccgcgagcta	60
gagaagtggt	tctcaacctt	cctagtgctg	agacccttta	acacagttcc	tcgtgttgtg	120
gggaaacccc	ctcctgcaac	cataaaataa	tttttgttac	tacttcataa	caagtgttgc	180
tactctattg	ctatgaattg	taaaataaat	gtgtcttcca	atggtcttag	atgactcccg	240
tgaaagggtc	attctacccc	taagaggtca	tgatctacag	gttgagaacc	actgatctcc	300
agtaaccttc	acttgagtcc	atatcctcca	tgaaggtatg	gaagtcaata	aaactgagct	360
tcaagcctca	tcaaaatggg	tccatcccct	ggtacagtgt	gagtggaaga	atacccacca	420
tacggtcact	ggaaggagga	. tgtctgaagg	gtcttagatt	gtgtcaaggg	gtcctgggtg	480
tcaggatctg	ı acgaagcagg	g ctcgtcatgt	ttcatgaaga	ctacaggtat	gtgataaaac	540
tacaaactac	aaaagtacco	actgageces	ı tgtggctctg	g ctgggatttg	g gaggcatgag	600

gagcagaggg	tctggaggac	agcagtccca	gaaataatct	atgactaaga	aggctgaact	660
ggggtgactc	tctggtggaa	agagttgcct	tttaagaagg	aagacatacc	aggcatagca	720
acaactgcct	ttagtactag	cactctgaag	gcagaggaag	tccgatttct	ctgagttcca	780
agccagcttg	gtttacacag	caagttctag	gccaactagg	gttacatagt	ggactctcct	840
caaacggggt	tgagaaagga	ctcagcagtt	agctcagtta	actccagttc	taggaaatat	900
gatcccttag	tctgacctct	tggcatgtaa	gtggtgcaca	tacatatatg	cacacaaaat	960
acatcaatct	gcaaaggggg	agggaggaag	ggctggagtc	tgaagaaata	gttcagtggt	1020
taagagaatt	cactgctctt	cccaatagco	aaattcagct	cctagcatcc	atgtcagatg	1080
gcccacgaac	: acctgtaatt	ctagccccta	ı aactcagtgc	cccttcacaa	gacggggaca	1140
cacgtacaca	a tatacctaaa	ı aaattaggt <u>s</u>	g gtttttttt	atttataagg	tcaaatgcag	1200
aatatcaaat	gggttagaca	a gcagctccaa	a getggeetet	tecteccagg	gctcttcttg	1260
actcttggca	a ccctctttgg	g gtccagaaco	c cagacattaç	g ccatgactca	ı gctgataaaa	1320
tgcaaccca	t ggctcatta	a ttaggaagt	c tgtaattago	c ctgtctggta	a gcctccagag	1380
agaacccct	t tcacctgtc	t teeteetet	c acccagggg	a agagctcagt	t tttgcccctg	1440

agacagaaga a	gggaacgag	accatgagca	acgggaaatg	agatgctggc	gcacacacac	1500
tttatgtgtg t	gaagtetea	gagaggtcac	caataatgag	gcaatggaaa	tgagctgagc	1560
tgcctgaacc t	ccaagtttc	ctccaagaaa	accccacagg	ggagatgggg	catggcccag	1620
gccagctgcc c	cagcctctg	ctggcagaaa	gtgagcccgc	tgccatttta	atttttgata	1680
cagggtetea c	ctctacagct	ctgggggcct	aaaactcact	atgtagactt	caaactcaac	1740
caaaccaaca a	acaaaacaa	acaaaacccc	tgcactgact	ggagagatgg	ctcggttgag	1800
aacaatggct (gctaggagtc	aaacccaggt	cctgtggaag	agcatgctgg	taactgctgg	1860
gtcatcgctg	ggtcactctc	ttcacacaca	cacacacaca	cacacacaca	cacggcaatg	1920
aactcttcag	tgtcttgatt	tacggtttct	tccgataaat	: cctcaggagg	gcagtcaagt	1980
ggctcatttg	gcaaatgctt	gcctgagacc	tgagtttggt	teccagaace	catggaggca	2040
gaaggaaagg	gctccacaaa	gctctcttct	gaactccata	a tgtgcacaca	cacccacttc	2100
gcacacattc	ataatagtga	tgaatgaaaa	ı tgaagacag	a taaaaaaaac	caatttcgtg	2160
aaactgttag	cacgttcagt	caatggcttt	gggggtaac	c tgtttcagag	g ccatggtact	2220
cagtcactag	gctcatacto	gtcagacgct	t gaggtcagc	a atggagagc	t gctacaccta	2280

aaggtagcag	aggtcatttg	gctctgactc	agaatattcc	agctctccac	attcacagaa	2340
gttctacttg	gtcgtagaaa	aaagctgagc	ctttttttt	ttttggaact	ttatttttt	2400
aaagatatat	ttattttatg	tatatgagtg	cactgtagct	gtcttcagac	acaccagaag	2460
ggggcatcgg	atcccattac	agatggctgt	gagccaacat	gtggtcgctg	gggattgaac	2520
ttaggacctc	tggaagagca	gtcagtgctc	ttaaccgctg	agccatctct	ccagccctgg	2580
aactttattt	tgaacatgca	accccaccta	ccactatggg	ttcagtcacc	agcgccttag	2640
gaataaaatt	ggagaaaata	agctttatgg	ttagtcagct	gtcagctgtg	gggttgggga	2700
cagaagaatg	gttatgtttt	gttttcccat	caaggcctca	ctctgtgacc	tggttggtct	2760
gccacttgct	ctgtagatca	ggtttcaatt	acagagatcc	acctgctccg	tgtcgctatg	2820
ctgggataag	, aactaagtca	. ccctgcctac	cttattactt	tgtattcttg	ggcatggaac	2880
tcaattcctt	gtcagcgaga	gaataactto	: ctcgatcgga	ı gtgttttat	gtgaattggg	2940
ccaaaaaga	c tgcgatgctc	: tgagacctat	ttgtgaagco	: aagagtagto	g ggtagcacaa	3000
gtcagaaato	c caaggactt <u>c</u>	g gtaagctgag	g acagtaggat	gtgtgcgcto	c atgcacacac	3060
acacacaca	g acacacaca	c agacacata	c atgcatggad	c gcacagagg	c acccacgcac	3120

atgtgcctgg	atgaggcttc	agttcttcat	aaagctgcct	ttgagtttgt	gccctcccac	3180
tcttcctgag	gactggagtc	ctcacacctt	gggctgatag	tgcaccacta	ccttttttag	3240
tgacctcctc	tttgcagtca	caggctgaag	gtacagggag	gactctagcg	gccgtctgcc	3300
tctgtttaac	atgaacctgc	aaggcagtgg	gcagcctcac	ccctagcgat	ggcactgagt	3360
gatgccagga	acgctgtcct	catgtgccct	tggctgttgg	ggcacagtgt	gcctctgcag	3420
ggccagcctg	accgtgtgtg	ccagccagaa	tgcacaattt	ctgcccgacc	ttggaagctt	3480
tttgtctttc	cttgtgagtt	tettgtcace	cagcagtgtt	tcttgcctct	ttgcttgacg	3540
cctctatggg	aagatggaca	agacttttt	ttttctacat	cccctgcaaa	caggtttgtc	3600
atacctctca	ggggcagggg	tettgteeet	gtcaagcgca	gcaggccacc	: agacccagaa	3660
ctatgaaatc	tacccaactt	gtctctgtac	aaagttaaac	aacaaaaaga	a aacttggttt	3720
tgtttttgtt	ttttttttg	ttttgttttg	ı ttttgtttt	tgagacaggg	g tttctctatg	3780
tagtcctggc	tattctggaa	cttgttctat	: agaccaggct	atcctggaad	c tcaaagaacg	3840
gcctgactct	gteteeeggg	g tgctggtcad	c totgaagato	tgtgccacca	a tcatcaggct	3900
gggttttaaa	ı agattatggt	ttatattta:	a tgtgtatgag	g tgttttgtt	t gcatgtatat	3960

ctgtacatga	caggtgtgcc	tggtgtttac	agaggccaga	agaacatacc	agatccccct	4020
ggaactgaag	ttacagacag	tcgtgagcca	tctcggggtt	gctggggaca	gaatccgagg	4080
gctcttcttg	agtagcaagt	gcttctaacc	gcttaggcct	ctctgcagcc	cccacttaca	4140
ggatttaaag	gtagaacaag	gtttgtcacc	tgtcctggag	accctggcct	ttaattccag	4200
aactctggag	gtagagacag	atgattctct	atgaagttca	ggcgagcctg	gtctacacag	4260
agtgccgcat	gatagcaaga	agaagatcct	gtctttaaaa	gagacgagag	gggttgggga	4320
tttagctcag	tggtagagcg	cttgcctagc	aagcacaagg	ccctgggttc	ggtccccagc	4380
tccgaagaaa	aaaaagagac	gagagccagt	ggttggtgca	cgtctttgat	cccagtactc	4440
tggaggcaga	ı ggtagtggat	ctctcttgag	ttcaaggaca	gcgtggtcta	caaagtgagt	4500
tttaggacat	ccaggattac	: acgcacagaa	accttgtctc	ataaaacaac	: aaacaagaca	4560
agacagaaac	c totootaac <u>o</u>	g tagaccgcca	ı cacctgattt	. ttaaaagcto	: tcagtgaaac	4620
tgagcatggt	agcacatgtt	tgtaatccca	a gcagacatgt	: ggggagacaa	a aggaatggac	4680
tcagactca	g ccggagagca	a agttcacggo	c tagactggad	cattectae	a atgaggtagg	4740
aattggggt	t agcacatcaa	a gtaagtaac	c ctggaaacaa	a gtttgactt	g tccaaggtca	4800

cacagcaatg	tctggaaagc	taagtetggt	tccaaggccc	ccccttcctc	cctctctccc	4860
tctctataat	tgaaaagtcc	actgcttggc	aaaaactccc	aggactatat	taaacacaaa	4920
tgctggtgtt	ctccatgtct	tagggctttt	atcctagaag	gaattcaaac	acacaacacg	4980
aataccccac	agaaaggagg	gcagggtgga	ggggtaaggg	agagaggagg	aacttcaggc	5040
tactgggggt	attaaccagc	tctgtacccc	atccacacag	acccaagtta	gaaaagagca	5100
ggagagggg	tctggagagg	ttgttaactg	gcccagcagt	ttggcctgct	cttgcagggg	5160
cccagctctg	ttcccagcac	ccatttcagt	ggctcacaac	ttttaactcc	agccccaagg	5220
actetgette	cctctgagag	ctctgtactt	aacagggaca	cacagacaca	tacaattaaa	5280
aaaatgtttt	aaagtgagag	acgctctaga	caggctagca	. agtattgagt	tgtggcaggt	5340
acagctattt	taatagtgat	ttcaggttag	aaccctgggg	ı agggggaacc	aggagttaaa	5400
ctatgttaaa	tcagaaagac	ccaaagccaa	ı tctggtggaa	a gctgccattg	g gaggttctaa	5460
caagtetgge	ttgtcaggga	. aaggctcaga	a atgaaggttt	gagetgggg	c atcattagtg	5520
tataaaaagt	atgaaaacac	: tctaggaaga	a agacaagagg	g aggaacacca	a cggagagcga	5580
gccttacgat	gttccagcac	gtagacgcca	a aagtgaagc	c aggaaacca	a gcacagggac	5640

caggaaagcc	caaagttcat	tgtgaaaagg	acaaaggctt	catcctggga	aactaggctg	5700
ggagaggccg	tgttaaataa	agacagacac	acccatcaaa	atgacccaca	gagggcttca	5760
tgattacaat	agtatttcat	aggcggattt	gggcagaaat	ctgaatgcag	gggattacag	5820
agtaaatgct	gacttttgga	taagaatggc	agatcacagg	acaggtgtgt	gactcacatc	5880
tttaaagcac	actcccaggg	cagaggtagt	gagtttgagt	ttaggggcta	gtctggtctg	5940
gactggaaat	tctatgagac	cctgttctca	aaaactaaag	tatttgggaa	aaaagaactt	6000
ctgagggaaa	tggaggccgt	gtaggtctct	ctgggagccc	gtgcggcagg	, tggcgaggga	6060
ggatctgaaa	tggggagagt	cagcagactg	ctggaccttt	: cctagccago	agagatgcta	6120
aggcaggtga	agattaggtc	tcatggacct	gacacccgts	g cacacaggca	a gcatggcgcc	6180
ttcaaagcto	: tagtggatgt	gattgcccca	a gacaagtcto	g ccccaaagct	t catcttcgtc	6240
cattaataga	a aaaaaggttt	cttctgacca	a aggaagctg	t tetetetgg	a aaacaatcac	6300
ttaacaagga	a cattactaac	: acgaagctg	c tgtccgatc	a catcaccat	g acgcaagcac	6360
tteeettgg	g gttcatacgo	c agtgactca	g tgctcacga	c cctgtgcta	g gcttggccct	6420
cactccttt	t ccgctggaat	taagtgggg	a gtcagacac	c ccagaggac	c tgcccaagcc	6480

agaaagcttc	aagccacagg	agccagtgtg	tccttggctt	ccctacacat	gagctgtctc	6540
ttatcctcga	tcgagggcct	cacagtcatt	cctgaaaaga	tctggccccc	agccctgagt	6600
atggaaggct	aacttggcta	ccagtcccca	ctgtccttat	taggaagagg	caaaaccgtc	6660
ctctggcact	ctcttgaagc	atactggtat	atccgagaga	ggtaacagga	gccgatggga	6720
gctgggaggg	tcctggccta	ggcatagtct	agaagacttg	ggctaagtag	tctgggtccc	6780
caaaccataa	catttttctg	gtgactaaag	aaaaggagtc	tgtaagccta	aagcagaatg	6840
tggtgataca	cgcctacagt	cctagcactg	gagaggtgga	gatagaaaga	tcaagagttc	6900
aatgccagct	ttctgctatg	tagtaaggto	aaggtcagcc	tggactaaac	gactgcctta	6960
gaaacaacca	aatgacttac	cgtctaaagt	caggaactac	acttgctttc	: tcagactgtg	7020
tetgtetgte	: tggggctcct	cccatttcct	ctcctaacaa	catccactto	c cacteetgee	7080
ttagatctga	ı gatagtacca	gcctcagggo	c atggggtctc	: cccatagct1	ttcctctgca	7140
gtactgtggg	g ctcacctag <u>c</u>	g actgtttcto	g aactatatco	c taccctage	t ctctacccta	7200
gaaggcctga	a aactcacaga	a aattctcct	g cctctgcttt	ccaatggct	g gggttaaaag	7260
catgtgtca	c aactgtcct	t tttattctt	t taatatcgag	g acagggtct	c accaagttgc	7320

cccaagacgc cagccacacc	tgggacaggg	caggcctttg (gctctatgtt	cagtcttgac	7380
tccatgactg tggccgctag	cccatgaggc	tgcgcgtggg	aatttccttc	tgaaagctca	7440
cctggtatcg atgcttcctc	ttatcctaca	ccacaactaa	caaacctgcc	ccacctcctg	7500
gtcctgaccc tgctgcagac	ctgctagtcc	ttggtgaatg	agacctgggg	acccctctag	7560
tctgttgaga gctgctgaaa	tgctcaacta	tgatttccag	gtgaccctca	agtcggctca	7620
cctccctgat tgcacagcac	caatcactgt	ggcggtggct	cccgtcacac	ggtggccagt	7680
gacageetga tggetggete	ccctcctcca	ccaccctctg	cattgacagg	cccacgtgtg	7740
tccccagatg cctgaatcac	tgctgacagc	ttgggacctg	tcagctgtgg	gctcctgggg	7800
agccactggg gagggggtta	gcagccacgc	tgtcgcctcc	tagccaacac	ctgcagacat	7860
aaatagacag cccagcccgc	tcaggcagca	gagcagagct	gcacgacgcg	tcgatcccaa	7920
ggcccaactc cccgaaccac	tcagggtect	gtggacagct	cacctagctg	caatggctac	7980
aggtaagcgc ccctaaaatc	: cctttggcac	c aatgtgtcct	gaggggagag	g gcagegacet	8040
gtagatggga cgggggcact	aaccctcagg	g gtttggggtt	ctgaatgtga	gtatcgccat	8100
ctaagcccag tatttggcca	a atctcagaaa	a gctcctggct	ccctggagga	a tggagagaga	8160

aaaacaaaca 🤉	gctcctggag	cagggagagt	gttggcctct	tgctctccgg	ctccctctgt	8220
tgccctctgg	tttctcccca	ggctcccgga	cgtccctgct	cctggctttt	ggcctgctct	8280
gcctgccctg	gcttcaagag	ggcagtgcct	tcccaaccat	tcccttatcc	aggctttttg	8340
acaacgctat	gctccgcgcc	catcgtctgc	accagctggc	ctttgacacc	taccaggagt	8400
ttgtaagctc	ttggggaatg	ggtgcgcatc	aggggtggca	ggaaggggtg	actttccccc	8460
gctggaaata	agaggaggag	actaaggagc	tcagggtttt	tecegacege	gaaaatgcag	8520
gcagatgagc	acacgctgag	ctaggttccc	agaaaagtaa	aatgggagca	ggtctcagct	8580
cagaccttgg	tgggcggtcc	ttctcctagg	g aagaagccta	. tatcccaaag	gaacagaagt	8640
attcattcct	gcagaacccc	c cagacetece	tctgtttctc	: agagtctatt	ccgacaccct	8700
ccaacaggga	ggaaacacaa	a cagaaatccg	g tgagtggatg	g cettetecee	aggcggggat	8760
gggggagacc	tgtagtcaga	a geceeeggg	c agcacagcca	a atgcccgtco	ttgcccctgc	8820
agaacctaga	gctgctccg	c atctccctg	c tgctcatcca	a gtcgtggctg	g gagecegtge	8880
agttcctcag	gagtgtctt	c gccaacagc	c tggtgtacg	g cgcctctga	c agcaacgtct	8940
atgacctcct	aaaggacct	a gaggaaggc	a tccaaacgc	t gatgggggt	g agggtggcgc	9000

caggggtccc caatcctgga gccccactga ctttgagaga ctgtgttaga gaaacac	tgg 9060
ctgccctctt tttagcagtc aggccctgac ccaagagaac tcaccttatt cttcatt	tcc 9120
cctcgtgaat cctccaggcc tttctctaca ctgaagggga gggaggaaaa tgaatga	aatg 9180
agaaagggag ggaacagtac ccaagcgctt ggcctctcct tctcttcctt cacttt	gcag 9240
aggctggaag atggcagccc ccggactggg cagatcttca agcagaccta cagcaag	gttc 9300
gacacaaact cacacaacga tgacgcacta ctcaagaact acgggctgct ctactgo	cttc 9360
aggaaggaca tggacaaggt cgagacattc ctgcgcatcg tgcagtgccg ctctgt	ggag 9420
ggcagctgtg gcttctagct gcccgggtgg catccctgtg acccctcccc agtgcc	tctc 9480
ctggccctgg aagttgccac tccagtgccc accagccttg tcctaataaa attaag	ttgc 9540
atcattttgt ctgactaggt gtccttctat aatgacgcgt cgtgcccacc tatgct	.cgcc 9600
atgatgetea acactaeget etetgettge tteetgagee tgetggeeet eacete	etgcc 9660
tgctacttcc agaactgccc aagaggaggc aagagggcca catccgacat ggagct	gaga 9720
caggtaccac tgtggtccgt tcagggctgc tgacagtgcc gtaggaaggg tcatgg	ggcta 9780
ggagagaggg aaaccttgtc tgagcagtca gactttaggg gaggttcctg gaagga	aagca 9840

gttatcttat	atggagtaga	tgggtttccc	agaacggtaa	gagggacca	ggtgccagag	9900
aagccacata	aaggacagtg	tccccaggca	ggggatatgc	cagaaaatga	gagatactta	9960
tcactgggct	tgggatgaga	acgggttaaa	ctgggtaccc	tggcctcctc	tgcacagctg	10020
gaggtggccg	gtggtatgtt	ggctcaccag	gactgggtag	atggtacgaa	actgttctcg	10080
cctgagtaca	aagcctttcc	cacccagctc	aaactctctt	agctcctttt	ttagccagct	10140
gcaccggttt	cttcctgtcc	acggaagacg	gccattgccc	tgtgtctgag	cggagtatgt	10200
cccacatcta	gcctcagcct	dgtgdddaga	tctgctgtac	tgtatgttca	gctctgagtc	10260
tgcccttccg	gcagggctga	agggaatcca	gtcactaggc	: tcaaatctgg	tcaggtcaca	10320
ggtggctcag	ttttgaacaa	gctcgatggg	ragtaggcag	g ttcaccgagt	ctgccttccg	10380
tttgctgagt	teetttggag	acttccgag <u>c</u>	g cactaggtgt	gtettgeace	: catcagccta	10440
attcggtcct	tgccaccttc	: ctactaggg	c ataataggtt	: ggcgggaggt	aaaagcccac	10500
cagcgtgggg	g caggggtaag	g agtgagcgag	g ccgtaggtad	c aggaaagagg	g atcttggaat	10560
gtgtagggc	c atctgaatgt	cggagaggt	a agtctctga	g agactgctg	c acaccggtga	10620
cacatcaga	g ctgaggaggt	ccccaagt	g ttgtctccc	c cgcccccg	c cccatacgac	10680

tctgtcaaag caggagaggg ttttgagacc tcatgagaac tgatcctcct gataacctag 107	740
ccggttagat ttccactctc gccctttacg gctgcttcgt cctagataga gccagagcat 108	800
ctggccggtg aagctgggat agcagcaggg tgaccttagg ttcccaacgc ccctcttggc 10	860
ctggctccag ctgacccgcg tecttecccg cagtgtetec ectgeggeec tggeggeaaa 10	920
gggcgctgct tcgggccgag catctgctgc gcggacgagc tgggctgctt cctgggcacc 10	980
gccgaggcgc tgcgctgcca ggaggagaac tacctgccct cgccctgcca gtctggccag 11	040
aageettgeg gaageggagg eegetgeget geegegggea tetgetgeag egatggtgeg 11	100
cacaaagcca ggcgggctga gcatggggaa tggatggggt gggtgggagg taaagggggg 11	1160
ctaagtgggg gactgaggaa tcaggaccgg agatggaggg tgagtagtat gaagggggtc 13	1220
gagagttgga acgtagcagg gtaggataaa ggggattgtg gggatggcgc ccctataggt 1	1280
gcgcccaccc caggacgcct gacctcacac agcccttcct tcagagagct gcgtggccga 1	1340
gcccgagtgt cgagagggtt ttttccgcct cacccgcgct cgggagcaga gcaacgccac 1	1400
gcagctggac gggccagccc gggagctgct gcttaggctg gtacagctgg ctgggacaca 1	.1460
agagtccgtg gattctgcca agccccgggt ctactgagcc atcgccccc acgcctcccc 1	1520

cctacagcat	ggaaaataaa	cttttaaaaa	atgcaccctg	gtgtctgtct	ctctttctgg	11580
ggtggggaga	aaagggggga	gaggaattgg	agtgggaact	ttctactctg	ctctgactga	11640
tccccacatc	caaagtcgtg	cataagatac	gcccccaccg	ccagaagggg	cagaacctat	11700
aagtcttaga	gtataaagga	agcttctgct	gctcctggat	acccacataa	tactcagaaa	11760
aaaaggcaag	tcagaagaag	ggaaagatct	gagatccaga	ggagcctgaa	gggtcagggt	11820
gacttagcaa	gtttctatct	gagaccgaaa	taaaaggaca	ttgtggacaa	gagaaacaga	11880
gcaggacatg	aggagagaca	ggatcagcaa	gagtgacaga	gaaagagggg	acaggccagg	11940
ggtggccatc	tcagccctga	tttcacccag	actaaggcaa	aaacaacgtg	aaggactctt	12000
aaccaaggct	gtgcttggat	gggaggagaa	. ggtacagaga	. cattacccca	gacctaaaga	12060
agacaatgco	: acccgccttc	: tctccaggtg	g ctccaccatc	aagacccago	cactgagagg	12120
cagactccag	g taagagtcca	a gctacaagto	ctctacaggo	c acatgttcaa	a accgtcacac	12180
ccacactcac	g gcagggaaat	agacaagata	a ggctggagtt	gtggctcagg	g agcagaagtc	12240
ttccctagct	atggttccaç	g caccatggag	g acggaagggg	g gactgagcg	a aaaaaaaaaa a	12300
ggggggagg	g aaaaagtago	c agctactage	g ggcatttct:	a tgacccttg	t cctcaaccat	12360

agctagagac	ccagaggaac	acagaagtcc	agcagcaagg	cgcacatgct	tgcaatagct	12420
cccagacgta	aatacttcat	teegttegge	acatccgggt	catcagcact	tgactccccc	12480
ccccacactt	cttattacct	cctcttttt	ctaaaatttt	agatttattc	acttatgtag	12540
atgggtgttt	ttggttttgt	atgaatgtct	gagcaccatg	tgtgtgcctg	gcgcctcaga	12600
ggtcaggaga	gggcatcggg	tcccctggaa	ctagttacag	gtggttacag	cctaccgtgt	12660
gggcactagg	aactgaatcc	cagtcctctt	aactgacccg	cacatccaaa	cccaggette	12720
agcccctcat	cagcctgtcc	ctcctccagg	ccctcaggtg	tetecegtet	ccggctgctc	12780
tcccagacat	ccttccatcc	tctggtctcc	ctgctcctcg	ccctcctgtt	aacatccttt	12840
ctctctgccc	catctgtcct	gggcatcctc	: tcctgcgago	tgcagcaagg	tcaggatggt	12900
ttacctcatt	tgggatggco	: tgcaggttct	gaggtcaggg	g gcaactacag	g agaagagaga	12960
gattagtcto	g attgacttaa	a ggtggttcag	g caaggtcago	: tctgcccaga	ctcacggtct	13020
tttacccaga	a tgccagctct	cttcccatct	cctcggtgcc	c tatacaccto	c tetgeatgee	13080
ccggtttag	a caggtagcad	c aggggccagg	g cagactecta	a teccageeto	e eteettetgt	13140
ggccctctt	a gggtctgac	c tccaatagg	g cagggccag	g gaagggccag	g accaaaaagg	13200

gacagaaaga a	agcgtggcag	gcggcatggg	cacacttgat	tcaaccccta	cggctggtgt	13260	
atgggcagct	ttagaatgaa	ggtcagattc	tcacttcgag	cctctgcgca	ggtggagtgt	13320	
tgtaagcgtc	tegettteet	ccacctgttt	ctggaagaat	caggctcctc	ttcctcgagg	13380	
agagaattat	acctgctcac	cctacttctg	cctactggac	ataatatata	tttttttcct	13440	
ttcagggagt	cctttcctca	gctacagagc	catttaaggg	cactcccaga	gttcacagca	13500	
gatgcttgcc	tcctctcttc	agcctccaga	agcagagagg	cttgtgagca	aatgccagga	13560	
cctctgacct	ccacacagac	gctgtgctgt	gtgcacagcc	ctcaagcaca	cagcgaagca	13620	
atagtgaaaa	gtaacttaga	ccattttcag	gctggggaga	tggctcagga	gataagagat	13680	
cactgctcaa	cttgagcctc	gggaccacag	gtaagaccaa	cttgtctgct	gcaagagagc	13740	
tgcctggtga	gattgggaca	cacagaggca	gagttcatct	: aggaccgggc	e acgtcctgtg	13800	
tttgccgagg	tcccacaccc	geggateceg	gcccgcagca	gctctctgct	cccagaaccc	13860	
gtgagaaaga	gacctcaccg	g cctggtcagg	tgggcactco	tgaggctgca	a gagcggaaga	13920	
gaccaccaac	actgcccacc	c cctgcccaca	tecetggee	c aagaggaaa	c tgtataaggc	13980	
ctctgggttc	cgtgggggag	g ggcccaggag	g cgtcaggac	c cctgcctga	g acaccgccgg	14040	

aacctgaggg	aaacagaccg	gataaacagt	tctctgcacc	caaatcccat	gggagggaga	14100
gctgaacctt	cagagaggca	cacaagcctt	ggaaaccaga	agagactgct	ctctgtacat	14160
acatctcgga	cgccagagga	aaacaccaaa	ggccatctgg	aaccctggtg	cactgaagct	14220
cctggaaggg	gcggcacagg	tcttcctggt	tgctgccgcc	acagagagcc	cttgggcagc	14280
accccgcctg	gtgaactcaa	gacacaggcc	cacaggaaca	gctgaagacc	tgcagagagg	14340
aaaaactaca	cgcccgaaag	cagaacactc	tgtccccata	acggactgaa	agagaggaaa	14400
acaggtctac	agcactcctg	acacacaggc	ttataggaca	gtctaaccac	tgtcagaaat	14460
agcagaacaa	agtaacacta	gagataatct	gatggtgaga	ggcaagcgca	ggaacccaag	14520
caacagaaac	caagactaca	tggcatcatc	ggagcccaat	tctcccacca	. aaacaaacat	14580
ggaatatcca	aacacaccag	aaaagcaaga	tctagtttca	. aaatcatatt	tgatcatgat	14640
gctgcaggac	ttcaagaaag	acgtgaagaa	ctcccttaga	gaacaagtag	g aagcctacag	14700
agaggaatco	g caaaaatccc	tgaaagaatt	: ccaggaaaac	: acaatcaaac	agttgaagga	14760
attaaaaatç	g gaaatagaag	g caatcaagaa	agaacacatg	g gaaacaacco	c tggatataga	14820
aaaccaaagg	g aagagacaag	gagccgtaga	a tacaagcato	c accaacagaa	a tacaagagat	14880

ggaagagaga atctcaagag cagaagattc catagaaatc attgactcaa ctgtcaaaga 14940 taatgtaaag cggaaaaagc tactggtcca aaacatacag gaaatccagg actcaatgag 15000 aagatcaaac ctaaggataa taggtataga agagagtgaa gactcccagc tcaaaggacc 15060 agtaaatgtc ttcaacaaaa tcatagaaga aaacttccct aacctaaaaa aagagatacc 15120 cataggcata caagaagcct acagaactcc aaatagattg gaccagaaaa gaaacacctc 15180 ccgtcacata atagtcaaaa caccaaacgc acaaaataaa gaaagaatat taaaagcagt 15240 aagggaaaaa ggtcaagtaa catataaagg cagacctatc agaatcacac cagacttctc 15300 gccagaaact atgaaggcca gaagatcctg gacagatgtc atacagaccc taagagaaca 15360 caaatgccag cccaggttac tgtatcctgc aaaactctca attaacatag atggagaaac 15420 caagatattc catgacaaaa ccaaatttac acaatatctt tctacaaatc cagcactaca 15480 aaggataata aatggtaaag cccaacataa ggaggcaagc tataccctag aagaagcaag 15540 aaactaatcg tettggcaac aaaacaaage gaatgaaage acacaaacat aaceteacat 15600 ccaaatatga atataacggg aagcaataat cactattcct taatatctct caacataaat 15660 ggccttaact ccccaataaa aagacataga ttaacaaact ggatacgcaa cgaggaccct 15720

gcattctgct	gcctacagga	aacacacctc	agagacaaag	acagacatta	cctcagagtg	15780
aaaggctgga	aaacaatttt	ccaagcaaat	ggtcagaaga	agcaagctgg	agtagccatt	15840
ctaatatcaa	ataaaatcaa	tttttaacta	aaagtcatca	aaaaagataa	ggaaggacac	15900
ttcatattca	tcaaaggaaa	aatccaccaa	gatgaactct	caatcctaaa	tatctatgcc	15960
ccaaatacaa	gggcacctac	atatgtaaaa	gaaaccttac	taaagctcaa	aacacacatt	16020
gcacctcaca	caataatagt	gggagatttc	aacaccccac	tctcatcaat	ggacagatca	16080
tggaaacaga	aattaaacag	agatgtagac	agactaagag	aagtcatgag	ccaaagggac	16140
ttaacggata	. tttatagaac	attctatcct	aaagcaaaag	gatatacctt	cttctcagct	16200
cctcatggta	ctttctccaa	aattgaccat	ataattggto	aaaaaacggg	cctcaacagg	16260
tacagaaaga	ı tagaaataat	cccatgcatg	g ctatcggacc	: accacggcct	aaaactggtc	16320
ttcaataaca	a atcaaggaag	aatgcccata	a tatacttgga	a aactgaacaa	tgctctactc	16380
aatgataaco	c tggtcaagga	a agaaataaag	g aaagaaatta	a aaaacttttt	agaatttaat	16440
gaaaatgaa	g gtacaacata	a cccaaactta	a tgggacacaa	a tgaaagctg	t gctaagagga	16500
aaactcata	g cgctgagtgo	c ctgcagaaa	g aaacaggaa	a gagcatatg	t cagcagcttg	16560

acagcacacc	taaaagctct	agaacaaaaa	gaagcaaata	cacccaggag	gagtagaagg	16620
caggaaataa	tcaaactcag	agctgaaatc	aaccaagtag	aaacaaaagg	accatagaaa	16680
gaatcaacag	aaccaaaagt	tggttctttg	agaaaatcaa	caagatagat	aaacccttag	16740
ccagactaat	gagaggacac	agagagtgtg	tccaaattaa	caaaatcaga	aatgaaaagg	16800
gagacataac	aacagattca	gaggaaattc	aaaaaatcat	cagatettae	tataaaaacc	16860
tatattcaac	aaaacttgaa	aatcttcagg	aaatggacaa	ttttctagac	agataccagg	16920
taccgaagtt	aaatcaggaa	cagataaacc	agttaaacaa	cccataact	cctaaggaaa	16980
tagaagcagt	cattaaaggt	ctcccaacca	aaaagagccc	: aggtccagac	gggtttagtg	17040
cagaattcta	tcaaaccttc	: atagaagaco	c tcataccaat	: attatccaaa	a ctattccaca	17100
aaattgaaac	: agatggatca	ı ctaccgaata	a ccttctacga	a agccacaat	actcttatac	17160
ctaaaaaaca	a caaagacaca	a acaaagaaa	g agaacttcag	g accaatttc	c cttatgaata	17220
tcgacgcaaa	a aatactcaa	c aaaattctg	g caaaccgaa	t ccaagagca	c atcaaaacaa	17280
tcatccacc	a tgaccaagt	a ggcttcatc	c caggcatgc	a gggatggtt	t aatatacgga	17340
aaaccatca	a cgtgatcca	t tatataaac	a aactgaaag	a acaaaacca	c atgatcattt	17400

cattagacgc	tgagaaagca	tttgacaaaa	ttcaacaccc	cttcatgata	aaagtcctgg	17460
aaagaattgg	aattcaaggc	ccatacctga	acatagtaaa	agccatatac	agcaaaccag	17520
ttgctaacat	taaactaaat	ggagagaaac	ttgaagcaat	cccactaaaa	tcagggacta	17580
gacaaggctg	cccactctct	ccctacttat	tcaatatagt	tcttgaagtt	ctggccagag	17640
caatcagaca	acaaaaggag	gtcaagggga	tacagatcgg	aaaagaagaa	gtcaaaatat	17700
cactatttgc	agatgatatg	atagtatatt	taagtgatcc	caaacattcc	accagagaac	17760
tactaaagct	gatagacaac	ttcagcaaag	tggctaggta	taaaattaac	tcaaataaat	17820
cagttgcctt	: cctctataca	aaagagaaac	aagccgagaa	. agaaattagg	gaaacgacac	17880
ccttcataat	: agacccaaat	aatataaagt	acctcggtgt	gactttaaca	aagcaagtaa	17940
aagatctgta	a caataagaac	ttcaagacac	tgaagaagga	ı aattgaagaa	gacctcagaa	18000
gatggaaaga	a tetecegtge	tcatggattg	gcaggattaa	a tatagtaaaa	atggccattt	18060
taccaaaago	c aatctacaga	ı ttcaatgcaa	tccccatca	a aataccaatc	c caattottoa	18120
aagagttag	a cagaacaatt	tgcaaattca	ı tetggaata	a caaaaaacco	c aggatagcta	18180
aagctatcc	t caacaataaa	a aggacttcag	g ggggaatca	c tatccctgaa	a ctcaagcatg	18240

attacagagc aatagtgata aaaactgcat ggtattggta cagagacaga cagatagacc 18	300
aatggaatag aattgaagac ccagaaatga acccacacac ctatggtcac ttgatttttg 18	360
acaaaggagc caaaaccatc aaatggaaaa aagatagcat tttcagcaaa tggtgctagt 18	420
tcaactggag gtcaacatgt agaagaatga agatcgatcc atgcttgtca ccctgtacaa 18	3480
gcttaagtcc aagtggatca aggacctcca catcaaacca gacacactca aactaataga 18	3540
agaaaaacta gggaagcatc tggaacacat gggcactgga aaaaatttcc taaacaaaac 18	3600
accatggett acgetetaag atcaagaate gacaaatggg ateteataaa aetgeaaage 18	3660
aactgtaagg caaaggacac tgtggttagg acaaaacggc aaccaacaga ttgggaaaat 18	8720
atctttacca atcctacaac agatagaggc cttatatcca aaatatacaa agaactcaag 1	8780
aagttagacc gcagggaaac aaataaccct attaaaaaat ggggttcaga gctaaacaaa 1	8840
gaattcacag ctgaggaatg ccaaatggct gagaaacacc taaagaaatg ttcaacatct 1	8900
ttagtcataa gggaaatgca aatcaaaaca accgtgagat ttcacctcac accagtgaga 1	.8960
atggctatga tcaaaaactc aggggacaac agatgctggc gaggatgtgg agaaagagga 1	9020
acactectee attgttggtg ggattgeaaa etggtaeaae eattetggaa ateagtetgg 1	19080

aggttcctca gaaaattgga cattgaactg cctgaggatc cagctatacc tctcttgggc 19140 atatacccaa aagatgcccc aacatataaa aaagacacgt gctccactat gttcattgca 19200 gccttattta taatagccag aagctggaaa gaacccagat gcccttcaac agaggaatgg 19260 atacagaaaa tgtggtacat gtacacaatg gaatattact cagctatcaa aaacaacgag 19320 tttatgaaat tcgtaggcaa atggttggaa ctggaaaata tcatcctgag taagctaacc 19380 caatcacaga aagacataca tggtatgcac tcattgataa gtggctatta gcccaaatgc 19440 ttgaattacc ctagatacct agaacaaatg aaactcaaga cggatgatca aaatgtgaat 19500 gcttcactcc ttctttaaaa ggggaacaag aatacccttc gcagggaaga gagaggcaaa 19560 gattaaaaca gagaatgaag gaacacccat tcagagcctg ccccacatgt ggcccataca 19620 tatacagcca cccaattaga caagatggat gaagcaaaga agtgcagacc gacaggagcc 19680 ggatgtagat cgctcctgag agacacagcc agaatacagc aaatacagag gcgaatgcca 19740 gcagcaaacc actgaactga gaataggacc cccgttgaag gaatcagaga aagaactgga 19800 agatettgaa ggggetegag acceeatatg tacaacaatg etaagcaace agagetteea 19860 gggactaagc cactacctaa agactataca tggactgacc ctggactctg acctcatagg 19920

tagcaatgaa	tatcctagta	agagcaccag	tggaaggaga	agccctgggt	cctgctaaga	19980
ctgaaccccc	agtgaactag	actggtgggg	ggagggcggc	aatgggggga	gggttgggag	20040
gggaacacca	taaggaaggg	gagggggag	ggggatgttt	geceggatae	cgaaagggaa	20100
taacatcgaa	atgtatataa	gaatactcaa	gttaataaaa	aaaaaaaaa	aaaaagagat	20160
cactgctctt	gcagaggccc	ccagttctgt	tccccacaac	ctcttaggat	gactcacaac	20220
cacctgtaac	cccatttcag	gggatctgat	gccctcttct	ggtccccatg	ggcactgcac	20280
tcatttacaa	atactttcac	acagagacac	atgcacagaa	atggaaattt	aacagaataa	20340
acatcggaac	attaaaaaca	aaacaaaaca	aaacaaaaaa	caaaaaaaac	cccataggac	20400
tggagagatg	actcagtggt	taagagcact	gactgctctt	ccagaggtcc	: tgagtttaaa	20460
tcccagcaac	tacatggtgg	ctcacaacca	ı tctgtaatgg	tctcttctg <u>c</u>	g tgtgcctgaa	20520
gacagtgaca	. gtgtacccac	: atacatgaaa	a taaataaato	: tttaaaaaaa	a aaaagcccag	20580
aaagtgatga	actctattac	caccaaaaa	g aaaaaaaaga	a aaaagaaaaa	a ctcaaatcaa	20640
tcttgaagto	: tctttcgcat	atctctttg	g cctccaccct	gtctgtgga	t cccacatgtg	20700
ggggcggtgg	g ggcatctgtg	g ttcatttgc	t gagtgtgaga	a gccacataa	a gtgctggttt	20760

acgtgtttac	ttgttttcta	gatgggatgg	agcccaggac	cttaaccttg	tggggcaaga	20820
cttgctctcc	tgagctctac	ccaagcagtc	tggattgcgg	gtttcctgtt	tgtctgtgag	20880
ctctctgctt	tgtggtcatt	tgtgcccact	ggctcttaga	tcccatgact	tcccagagaa	20940
cgctgtcctg	cagaggcaga	cacagggccc	ctgagctcag	gcccggccct	ggagacagaa	21000
acggagaggc	cagttgattc	ttgatatttt	ccgttgtggc	ttccttgggg	cctgtgtgag	21060
aattcagctc	: tgtagaaacc	ttatggttct	gcaactaccc	teceetggee	aagacccttt	21120
cttctagccc	: gggattaccc	cctcaacctc	tgaggtcgcc	gccaaggtct	ccttccagat	21180
atggaagtga	a ctggatgagt	cccttgcggc	ctcgcctgcc	: ttcccatcac	ccaggcccct	21240
gtttggcttt	geeettteee	acagaagtco	accattgct	g tttggacttc	caaatggtgc	21300
tcctaagtc	t gtctgccgca	ggccttaccc	cagtcgggag	g tgggaaacgg	gcctaactgg	21360
agatgacaa	c ctgtagagac	: ccctcggtcc	c tectageag	c ctgctgggct	gtteteecte	21420
tgaattgcc	a atgtccatgg	g cgtteceggt	geettteet	c cctcccgttt	: ctgacaatta	21480
gacgccagt	c aagtttgaaa	a aggaaatct	g ctttattta	t ttatttatgt	tttttttta	21540
attttttc	t ggtagtggco	c atggggaac	g aaggaagcg	c cctaaaggta	a tcatcacaaa	21600

gcagggctca	gcggccggtc	tcagtgctgg	gagaaggcgg	cctcagggtc	gcaggcgggg	21660
tcctcgtggc	agccgtctgc	acagagagac	gccgagtcag	ggccgccctg	gcccagcccg	21720
cctggtcctg	gagccccggt	cccgtctcga	cccctgcccg	actcacccgg	gctgcagcag	21780
atgccggcgg	cggcgcagcg	gcccccgctc	ccgcagggct	tctggccgga	ctggcagggc	21840
gacggcaggt	agttctcctc	ttggcagcgc	agegeetegg	ccgtgcccac	gaagcagccc	21900
agctcgtccc	cgcagcagat	gctgggcccg	aagcagcggc	ctttgcccc	ggggccgcag	21960
gggagacact	ggtgggaggg	aagggatgag	ccgggggcgg	gaggggagcg	gccggggagg	22020
gagaccctgt	ggggcggggg	gctgagccgg	gcgggcgagg	gcggccggag	gagcgcggga	22080
ggtggcgggt	: ctccctggct	ctctctttgg	gctcaaaagc	ggtcgaagga	gggcagtcaa	22140
aagctcctcc	geteeetega	. ttcccaggct	aggtggggco	ggtacgcggt	: cagcgcggga	22200
aagggggcgg	g cgggggcgac	: cctgtggcag	g egggeeggge	agcccggaga	a gccacgggtc	22260
gagggcggg	g ctctcaccgt	gegeaegteg	g aggtccagca	a ccgcgcgttt	geegeeeagg	22320
gggcagttc	t gaatgtagca	a ggcggaggto	c aacgccagga	a ggccgagcag	g gcagcaggcg	22380
aggctggaa	c ctgccatgg	gttggtgtt	c agtccgagat	t cggtcgacc	g atccaccgtc	22440

ggtgatggtt	tctccagccc	agaccgacct	ttttatgcct	tgtccactgc	catggtgggg	22500
cccagtctaa	gagggtgact	gcatgactgg	tcacagccag	gtctcttggg	tcaaactgtt	22560
ccacactgtt	tagaagcagg	cccttcattt	gcagggtctg	ggctggggtc	aaggtcaccg	22620
cctcagctaa	tgacctgagc	tcaaaaggga	cacagcctag	aaggggaggc	ctaagctaca	22680
agaggataaa	gagacttgga	gggggtagag	gtgcagccta	gccaagagct	gttttttcat	22740
agaaatccaa	tacctcagaa	tgaggttgga	tagcgcaagt	gggtgaggaa	gcccttacgt	22800
ggatctaaag	cttagatggg	gaaaaggatc	ttgttcaatc	tctgagtgca	gctcagccct	22860
tcttctaact	agcccgtaaa	acaaaatatc	: agtagaaato	aaacccaaaa	acacaacaaa	22920
cagaccaaaa	ı taaagtaaaa	agaaagaaaa	atcacaataa	ı aaggaaaaat	. cacacttgca	22980
cttacaacto	tgtattaggg	g ctggagagat	ggeteagtg <u>e</u>	g ttaggagcad	tgactgctct	23040
accaaaggco	c ctgagttcaa	a atcccagcaa	a ccatatggto	g gctcacaaco	e atctgtaatg	23100
ggatctgato	g coctottoto	g gtgtgtctg:	a agagagctad	c aatgtgctt	a tatataataa	23160
ataacttta	a aactctttaa	a aactctgta	t tagaacttg	c tatgaggac	c aggctggcct	23220
tgaactcac	a gtgatctat	t tgcttctgc	c tcccaaatg	c taggtacct	a cactcccgtt	23280

tgagaaaaca	caggccatca	gctgcttgag	cgtggccaac	aggcggcctc	agctacagag	23340
agccatttgt	cctaaggcca	tacccttcct	ggtggccaca	tgtaatggtg	gcccatttta	23400
gtacatacaa	ctaggcatct	cgtgttgcat	ttcagggttg	ggctgcaggc	ctgcataggt	23460
ctgcatggga	agaatgctac	atgcagctca	gtagcagact	gcctgcctag	tgtgtgagag	23520
accttgggtc	cagtccccag	catggtggta	gcaagacatt	ttgggaacag	tttttgcttt	23580
aaattttaac	ttttatttgt	gtgtatgttt	gtgtacacag	gtttccttgg	caaccagaag	23640
aggatgttgt	atccccagga	cgtgtcatta	aaggggatca	tgagtaggcc	tatgtgggtg	23700
ctgggaacaa	. aattcagaat	tctgcaagag	cagtgtgcag	acttaaccat	taagccatct	23760
ccccagctcc	: ttgattttgc	atttgaatac	agtttaaaat	gaaatgcaca	ttaagccacg	23820
gtgacagtga	ı tgcaaacttt	. taatcccaga	actcaggagg	cagaggcagg	g agaatgtctg	23880
tgagttccag	g gccagcctgg	y tctacagaco	: tagttccag <u>c</u>	g ccagcctggg	g ctacacaaaa	23940
aaacaaaago	c aaaaccaaaa	a caaaataaag	g acacagacaa	a accatggcag	g gaagacatgg	24000
gagcctcaa	c ctcttcattt	gacggctga	g aaatcgaaaa	a cagatgacca	a ggagagacca	24060
aggteteae	t getgeette	a aggettgee	c tcagtgactg	g gaagatgtt	c cactgggccg	24120

catcttaata	tcttaccatc	tcagggctgg	agaactggct	gagtggttga	gttgctcttg	24180
cagaagteet	aggtttgatt	ccgaggaccc	acagggtggc	tgagatcact	tatcccagtt	24240
ccagtggagc	cagtacccaa	atagtgcatt	acacacttgc	aggcagaacg	ttcagacaca	24300
taaaataaaa	taaatagacc	taaaaacatt	taaaagaaag	gagaagcatt	atccagagtc	24360
gttttatttt	gttttgagat	agactcttag	ttgacctggg	actgtctgtg	tagactaggc	24420
tgggcttgaa	ctcacagcga	tececetgee	tcccaaagtg	ctgggtgtac	caccgtgcca	24480
ggtacctagg	cccctgttta	agaagacact	tgccatcagt	ggctgggtgt	ggtcttagct	24540
gcagaaagcc	acctggccct	tcccaggtgt	ccacatataa	tggttggtcc	actttggtac	24600
gaatgctggg	caccccaact	gcatgtcagc	tttgggcttt	gggttagctg	aggtctgcat	24660
actggttcta	gttgcccacc	ccttctcttc	catagaggtg	gggcctaagc	ccgtgttcta	24720
aactccatct	: caggctctct	taagaagtga	cctgcgacat	ccaggaagaa	gtaacagcca	24780
gtgcccccga	gacccactca	ctacatgcag	g teteageeee	tagagaggat	ggaaaagcct	24840
ccggtctcct	tgttcttatg	atcageette	c tcctcaagga	ı gctggggcca	ı gtggggcaaa	24900
gcacattcto	ttctgaccct	gaatcacaga	a tootgagtoa	ı ctggtgcaaa	ı ctatcaagcg	24960

ctaagttggt (ggtgaggttg	acctgtacta	caaatcactt	catttctcac	ccagactagc	25020
ttattggcat	tccaggcata	gaaagccaag	agcttgaccc	ccactatagc	cccagagaga	25080
cagcccacat	agtctgtggg	catagtgatc	tcatcttagg	taatccatgc	acataaatta	25140
gcatgtcttg	ataatacata	cctaatgctc	ctgttaggcc	agcatgccta	acatgctcac	25200
caacccaatc	tgtgtttggg	aaaggccaat	attccgcaag	gcagaatgct	agtccttcag	25260
gaatggggct	gcagctggac	tggggagaac	acactgaggt	tataagagga	ccattgaggc	25320
ctaatagcca	aggtagagta	ggcggagcct	tgggttacag	tgttcagcac	caggaggaaa	25380
gagtcactat	caccatgggg	ttcatctgtc	actggaggaa	gcagaatatg	aactaagagg	25440
catattatgt	tgggttacga	ctttagttaa	gatctgagtg	tatcccatgt	gatacattgt	25500
cagtccttag	gaagatgtct	tgggagatgg	tgagatcttt	aagatagaga	cccagtgtca	25560
ggttctttat	gtctctgaca	gcatgcccat	gaaggaagtg	gteteteetg	gatctcttt	25620
tcagttttgc	aggcatggga	tgaaggggtg	tateetteeg	tgtgcttctg	g ccatgatgtg	25680
tacttcaaca	tagacctgta	aggaacagtg	gctacagatt	gtggactgaa	a gtctctgaga	25740
ctgtgagtcc	aaataaccct	ttctttctag	gcatggcggc	acacacctgt	: aatctcagca	25800

tgctggaaat	gtgcagcagg	atcaggagtt	aaagaccagt	ctcagataaa	tgacagttca	25860
aagccatcaa	ggggataatg	agatacttcc	tcaaaaacca	tcaaattaaa	acttttgttt	25920
ttatacatta	caacttgtca	ggggttttgc	tatagtaatt	aaaagtcacc	acaggaaaca	25980
aaggcacgta	aacatagcaa	catgtgctat	gtttaaggca	acatgtgcta	ggaaggtaga	26040
tatcaccatg	ctgggtgctt	agaccagggc	tatgtcgagg	tcccggagga	gagctgagga	26100
agccctgggt	gaatgtataa	tgtatcacgg	gcctcagacc	tgtgagatct	ggcaaagctt	26160
ccccctgcac	gctgtgggtg	aggtgaatgg	ggattcggca	gagcctttgt	ctggtctgag	26220
tgcaaatgct	gacggtatgt	tctagtggag	gtgtttacaa	aggacgggcc	agtgtgcgct	26280
ttagccatag	g aagtggtggc	tccctgatga	atgtccacaa	cctgggattg	ctgcccacaa	26340
gatcagccag	g geceteteet	gcgctgtgca	gagtgaacac	acggaggttc	tgggctgctc	26400
cagtggctgo	c taccattctg	ccagagagtg	g cacaggccac	ctgaccccag	cctttctgtc	26460
catgtgtctg	g teetttette	actctctcac	cacccttgtt	: agggtcccag	g atccaagtta	26520
tgtaggggg	t ggattaggaa	ı atgctatggg	g atgagaggca	a gtgttggttg	g tcattctcct	26580
tagggtaac	c tgtgagtato	c aaggaaagaa	a agtgtacaco	g cagaaggcto	e accgtgctgc	26640

tgctatgtac	aagtgagcac	aaatgtaacc	tctggaaata	cccatttatc	atgtctgttt	26700	
tgggggcaga	gcccaggcag	gcgtttctac	tcatggtcct	aggagcagcc	tctcctcatc	26760	
tggtatgcag	cccttcctta	tccgagacgg	agcctggtgc	cgggacacag	gtcatttccc	26820	
tgcagttgta	tattatttgg	gcagctcact	tctttaaaat	atttttgaaa	aaattatgtg	26880	
tatgagcctg	catgtatgtc	tgtgcaaaat	gtccacagag	gccagaagaa	ggtgtcagac	26940	
cccctggaac	tgggagttcc	gggtggtcgt	gtttggcata	tggggcctgg	aaaatgaacc	27000	
ctggtctcct	agaagagcaa	ccagtgcgct	cagctgctga	gcacctctcc	aactcctgct	27060	
tctctggact	gggagacaaa	ggaaaagtga	gagactgatt	ctgttctgtc	aagtctctga	27120	
gcatagggaa	. gacctaggtt	cattctatgt	catctgtctg	tctgtctgtc	tgtctgtcta	27180	
tctatctatc	: tatctatcta	tctatctatc	tatctatcta	ı tctgagacag	gatttcacta	27240	
tgttagcctt	ggctgtcctg	gaactctatg	tagacaaggo	: aggtcttaaa	ctcgcagaag	27300	
atcctggtgg	g teteteecea	. ctttgcctga	ttaggctcac	ttttaaaggg	g aatgaaatgg	27360	
gctgggtgtç	g gcagtacaca	ccttgctctc	agcactccga	a ggcacagaaa	a ggcagatete	27420	
tgagtttggg	g gccagcctgg	, tctatgcagt	gagctatag	g caagccaggg	g ctacatggta	27480	

ggaccttgtc	ttaaaaagag	ccccaaacaa	atagctcact	tgcccaggtg	aggtccacca	27540
gcatctctac	attttgaccg	gaagctaaga	ggaatcttta	ttacatcacg	cctgccacag	27600
tctccatctt	tgttgcagct	ggagtgctcc	cacagggctt	ccactgcacg	cactgcaccc	27660
gaaggggctt	ccacttcacg	cacttcaccc	gaaggggctt	ccacttcacg	cacttcaccc	27720
gaaggggctt	acacttgatt	cacttgaccc	gaaggggctg	acactgcttg	cactgcacct	27780
taaggggctg	acactgaccc	aatggcaccc	gaaggggctg	acactgaccg	cactgcaccg	27840
aaggggctga	cattgcacac	gctgcaccca	aaggggctga	cacttgctgc	actgcacccc	27900
aaggggctga	cacttgcacg	cactgcacct	accaagggtg	acactgcacc	tgctgcaccc	27960
aagggggctg	acactgcatg	cactgcacct	accggggctg	atactgcacc	cactgcaccc	28020
aggggggctg	acactgcacc	cactgcaccc	aggggggctg	acattgcaca	tgctgcaccc	28080
aaaggggctg	acacagcacc	cactgcaccc	gagggagctg	acactgcacg	cactgcacct	28140
accggggctg	acactgcacc	: gcttgtaatg	tacattactg	, ttttttttt	ttettttett	28200
tttttcagag	ctgaggaccg	g aacccagggc	: cttgcccttg	g ctaggcaagt	getetacege	28260
tgagctaaat	cccctacccc	tacattacto	; tttagaaaca	a aatttatggt	ccttctcaca	28320

tgctgcagga	gattacacaa	agttgggggt	tatcaagaat	gtggatcacg	gtggatcatt	28380
ttagcactgt	ccccccaca	gaaagggtca	tttctagaca	gaagaaaata	gtttatatgg	28440
aacacttctg	ggctgggcag	tggtagcaca	tgccttaaat	cccagcgctt	gggaggcaga	28500
agcaggcgga	agcacgcgga	tgcacgcgga	cgcacgcata	tctgtgaggt	ttaggccaac	28560
tcggtctatg	cagcagcttc	caagacagcc	aaggctgtat	ggagaccctg	tctcggggtt	28620
ggtggggaat	ctcttcaccg	tcttggtcac	ttctttatgt	gtgagacaca	tagacgtttt	28680
tcttctgaat	attttattgc	tgcttgtggc	attcacaact	tagggaaaaa	ttgttaaatg	28740
ctgcattccc	agcacttgag	ccagtgaagt	tcaggcctcc	gctcgtcttg	taatggtatt	28800
tgcacagggg	g atgeettgge	tgagtgagtt	cttccagaaa	actcctgggc	ccttaacacc	28860
tatttccago	e atttggaaat	ccgaggcagg	aggattgaca	ı tgagttgcag	acatagtcag	28920
ctagaagtgo	c agcattaaat	cctatcttaa	aataattatt	agaataattt	agggggaaaa	28980
gcctctaata	a gagatgggag	agtgtgcgca	tgactgccct	actgtgtgct	tctagaaatc	29040
aatatgaat	g ggccagaact	agagaaaagg	ı ctgtgagagı	g ctgtacccta	ctgtgtgcaa	29100
cccacttcc	c tcctactate	g tgggtgctgg	g gcatgacac	g aggttatcag	g gctgggtgac	29160

aagcaccctt	acctgtgggc	agtcttgctg	gtccaaccta	tttgcatttg	aatcccagct	29220
acttcaaacc	ccatgggtgc	atatttaccc	acttttggtt	ttggaaacag	gatcttaaaa	29280
taaacaggtc	tcactctgta	acccatgctg	gcctgaattc	agcatcttca	gcctcagtct	29340
cccaagcgct	acgatttcct	atgtgccata	tgtcacaata	catgcacttc	agttttgtca	29400
aaagaagtga	accaggaata	actggtacct	acctataaga	ctgctgtgat	gaaggaggac	29460
attgtgtaaa	acgaaactca	ggatatagta	agtgctcaac	acgtgttaga	catgttggtc	29520
tccatgaggg	cacaaaccca	gggcctcatg	catgccaaga	attggcccta	tcactgagct	29580
atacaattag	tccctatgac	ctactgtgac	ctcagacgca	caccatggat	ctgacattgc	29640
atcaaatcag	g aaatgaattt	. ctgaaagact	tgctcatagc	atgecetece	acacccccgt	29700
cccagccccc	c cctctcactg	g gcaaggacat	ctcactgtgg	tggtggcagg	gcctctaaaa	29760
catcatagga	a tagctgagca	a gcagtggcac	: atggcctctc	: agtcccagca	caggggaggc	29820
agtcagccto	g gtctatagto	g taagctccgg	g gacagccag <u>c</u>	g gctacataga	a gaaaccctgt	29880
caaacctac	c ctacttaaaa	a acagaagtag	g agcagtagtt	tggattacad	c tgctttgaca	29940
cttggtggg	t agcatgtgt	g cacctgccc	a ggagctatct	ggattetea	a atggaagaca	30000

cagacacaga	cacaaacaca	aacacacaca	cacacacaca	cacacacaca	cacacacaca	30060
cacacacaca	cacaccagtt	aacttttgac	acgccatgac	tagctcaaag	gctagggact	30120
cccaaacctt	cccctgtcag	caaatgctcc	cctctggtac	tcctgagact	aagctaagcc	30180
ttcccctgct	gtcccaggcc	caacggagga	agtgagcatg	gtcacttacc	tgattctttt	30240
ttttctttt	ttcggagctg	gggaccaaac	ccagggcttg	cgcttgctag	gcaagcgttc	30300
taccatgago	caaatcccca	accccacata	ttctgattct	tacatggctg	attggctttc	30360
tgtccctgca	gttcttacat	cctgtccttc	ttccctgaat	catgaggacc	: ctctcctctc	30420
tctctctctc	: tetetetete	tetetetete	tctctctctc	tctctccctt	ctctctgtgt	30480
ctctgtgtct	: ctgtctgtct	gtctgtcaca	cacacacaca	ı cacacacaca	a cacacacaca	30540
cacactage	c catgcaaatc	taagggccc	: ttcccgtctc	c cetttgeetç	g accattggct	30600
cctggcatc	t ttattgatca	a atcaaaaac	c aattggggat	aaggaccta	c agtgtttgga	30660
catgaagat	t cctaatttgg	g gggctgcati	t aattcaaaa	c attggaacc	a attcccaaca	30720
acaacaaca	a caacaaataa	a agcaaagaa	a aaagtttac	a acgctgcct	t cattatttga	30780
gaaacaaat	g taaggaaaa	c catcaggta	t ctggacttt	t aaacggccg	g gatttagaga	30840

ctctgggatg	ttttctgtgt	tggggattga	agccagggcc	ctgggacatg	gtaaggaagc	30900
actgtaccat	gaaactacac	cccagagtct	gataaggcta	ctgaatgaca	attaaagatt	30960
cataattgct	gaaattctgg	aaaactctaa	gctaccaatt	ttgtatatgc	tcaacttggt	31020
ttcctgaaaa	catctgaggt	tcttgcacgt	aacttttcct	cagagcaagt	acaactaaat	31080
tctgactttg	tgacaataaa	gattgtcagg	aaaggctttg	tgaaaatgtt	cagtccccag	31140
gagacgtgcc	ctcctgcagc	ctgtgaatgg	cggccaggtc	acaagtcagc	agatgcagtg	31200
gaacggagtg	tggtacttct	gtgagacact	gcaggactgg	atggatggct	tagtagttaa	31260
gaacatgggc	: tgctctccca	gaggacctgg	tttcaattcc	aagccttggg	ccctgcaaga	31320
accttatata	gactggctto	: aagttctcca	ı tgtagctgaa	tatgacatta	aactccagat	31380
actcctgagt	cctaggttta	ı cagctgtgta	a cagctatgtt	: tcttccctga	a cgaccccgca	31440
gccccatti	tgagataggg	g atttaggtag	g cccaggctgg	g ceteacacte	g actaagtgag	31500
actggcttt	a aactcctcat	cctttaagg	t accaccatga	a atttgctgta	a tagctctggc	31560
tggccttat	a taatgtaga	c tagactggc	c tttaacttta	a aaattgtgc	a ctttatttt	31620
ttttaaatt	a tgtattta	t gtatatgag	t atactgtag	c tgtcttcag	a cacagggcac	31680

cagacctcat	tacagatggt	tgtgagccac	catgtggttg	ctgggagctc	aactcaggac	31740
gtctggaaga	gcagtcagtg	ttcttaacct	ctgagccatc	tctccagctc	tctgcttaat	31800
aagtgctggg	atgactagca	tgtgtcaccc	tcctggccac	ttctggtgtc	tcctttccag	31860
gcttttaaaa	attatctgtt	ggcatgtcca	cacagggtta	tatgcatatg	aacgcaggtg	31920
cctgtgggct	gtcctgtcct	ggaactggac	ttacagatgg	ctgtgagcca	cttgatgtgg	31980
gtgcctggaa	actaactggg	ggtctgaaaa	agcgggaaga	actcacatga	ctgtggagtc	32040
tgctacccct	tttattataa	aagaaaagaa	gatattttaa	cagcacgtat	gagacacaag	32100
tgaaagctgt	ggccatggtc	ttcagggatg	gttaggtcct	gcaaaactga	aggaggtggg	32160
ctctgggtgt	tggtcacatg	gtagattgat	aggccctggg	ttcaatcccc	: acctctgcat	32220
aaagcaggca	a tggtggttca	ctgcctgctt	ttagaggaag	g aggcaagag <u>c</u>	g attggtagaa	32280
tctcaaggt	c attttcagct	acatagcaco	: agtcaaatct	ttgagtccaa	a gaccagcctg	32340
atctgtgta	c tgagttccag	g ggcagctaca	ı tagttgagad	c cctacttaaa	a atttcaaaca	32400
acaaaaccc	a caaggtttaa	a aaactctato	acttttagt	t atgtttgtg	t gtaagtgttc	32460
gtgcccacg	g aggttagag	c actgtatcc	c ccggagtgg	t gagcgggct	g gcatgagtgc	32520

tgagggctga	attcagcatc	tgtgttcaac	atatttgtta	aagcacacga	agaggaaatg	32580
gccagtgtca	acaggagccc	agccaggctt	ggggtgggaa	aatgctttga	cttctatctg	32640
gcaagaaaaa	aacaattcca	agtttgatcc	ttgccagact	ctttggcctt	taccaggctt	32700
cctcacagag	tctgctgtaa	ctgtttctgc	aaattcgcag	aggaacctga	gatctcaggg	32760
cacgttggat	acccacgtgc	tggagaaact	gaacaatgac	tttaggtttc	atcgtgcctg	32820
gatgaaacat	gaaaataccc	cacaccgctg	agctgacaaa	tgtgcctctc	tctctgtagc	32880
ccttcagtca	gctgagcagt	ttgccctcgc	tcggctgcag	taccagcaca	ggcaccccag	32940
tctccccgat	gagcggtctc	atgaggattc	aggttggtct	cgaactccct	atgtagctga	33000
aaatgacctt	gagattctac	caatcctctt	gcctcttcct	ctaaaagcag	gcagtgaacc	33060
accatgcctg	g ctttatgcag	aggtggggat	: tgaacccagg	gcctatcaat	ctaccaagtg	33120
aacaacacco	c agageceace	: tccttcagtt	: ttgtaggacc	: taacctagcc	: ctgaaggcca	33180
tggccatggo	c tttcccctca	a gcacccactt	atcatgaagg	g ggcaagggto	: cagtttcttg	33240
gttaagtato	c tacgettgtg	g actagggaga	a tacatcctgg	g gcaggagtga	agggttaccc	33300
attcagcago	c agagttccta	a ggtttactg	t gacaacaaa	g atctaggaat	ggcctaggtt	33360

gtcctgacat	gatcccatta	gcctacctca	gatatctgaa	tgcaggggct	cactgtgtgt	33420
cccagtcagg	gacagtattt	actaccctaa	agtgggttac	agctctcggg	ggggggggc	33480
tgcgtgcagg	acgacacctg	caccttcaca	cttgcttctt	caatggagta	agaggctgct	33540
aacatcccca	aggtttccat	ttcagctagg	atgagagtct	ggagttcatg	tccctggtat	33600
tcaagtatat	gacactgaag	agcaaagagg	cagagagctc	atccactaac	aggcatgcac	33660
tgcactcatg	aacatctgtg	tctgatcccc	ggtacacatc	aaagccatgt	gcaccgaatt	33720
ccagcgccag	gcaagcatac	gcagatgcat	tctctgaggc	tagctggctg	ggcagtctaa	33780
atactgagtg	ccaggttcca	gtgaaaggco	tcgtctcaaa	. aaccagaaca	aaccaaatca	33840
aaccaaacgt	aaagcagacc	aaggtgagag	g agtcttgaaa	tgacacccaa	gggtgctgtc	33900
tggccactgo	ttacacacac	tgaaggacag	g caactgacc <u>c</u>	g caagaagcgg	g gtttagagtg	33960
gagtctacto	g tetgetgggt	agtccaatga	a cgctgtgtca	a gggcagggto	c cggttacaga	34020
aatcactgad	ggggaagcct	tcccaggaga	a aacggggca	c cetttttge	t ttctggacct	34080
tggacacac	c tgaccctacc	: cagcaaagc	c caggattga	g caaagcaga	t aactaactcc	34140
tggctcagt	t aggtgaactg	g gettttgge	t aataacctt	a agacccaaa	t aactgggaca	34200

aataaactta	ttctacaaca	agaaaaagca	agccacataa	caaaaggctt	tgctttccaa	34260
tagtttattt	ataaaagcag	gaaacattgg	gctcacacta	ttccaagaaa	ctcaggagac	34320
agctcttggc	ttctagaggg	gacagtccag	tctgatcttc	tgtgtgatag	gaacttccca	34380
gagtttaatg	ctgtccggag	tttgtatgtg	gtgtcagaac	aggtactata	cctggtgcca	34440
aatctagaat	gaatgggggc	tgctctggac	aaggetgtge	caccctcctg	ggatgcacca	34500
atttctaccc	caatatccag	tccctaggca	agcactgtcc	ttatttgggc	ctgagaggcc	34560
tctgttctca	gttcctgacc	acctgccctt	ctttggtgac	cgcccagtta	taactcttcg	34620
gagagtccaa	ggcctcttct	atccgtgcct	ccaggttctc	ccgagtgatg	aagtttttgg	34680
cctcctccta	ı cgggaagaga	aaggttagct	acgtgggatc	tctcagagct	ggctgcctgc	34740
ataacttact	gtetetagee	: caccttaaga	agggtgtcaa	aagagcccag	ggcccctttg	34800
agtgtcccac	c caataggcca	gcacaactgt	: actaggtgac	ctcaaccatt	atatccctct	34860
tcctcggaca	a attacccato	c agatetetea	a gccacaacco	: aagaacgaat	cgaatcgtga	34920
caacctgat	t gggggcggg	g ggaggtgcgg	g ggtggtggad	tctctcaaco	ttgtcactct	34980
cccttacac	a ataaaaaca	g ctccattcto	c atttatggtt	tecetgace	t tcaagtttca	35040

cacggcaata	ctagcctgta	acctttcatt	gaccattgtc	tgggaggcac	tctgtgtgtg	35100
cagagcagag	agagaagcct	cctgaagact	ggtcacttga	caccctgtgc	tgctctcccc	35160
agageeteee	tcaccggaat	ctccaatacc	cacattcctc	acgacctcgg	cccacctgca	35220
gtttgagaac	ttcttgttct	ttcagttgca	cccaagcctg	ctcctcctgg	gccctctggg	35280
cctggacctc	agcctgccgc	agctcctggg	cctgtgcttc	gagctgcaac	ctagctatcc	35340
tgcgaggaaa	aaggagccga	gaatgagcgg	ggccgtgggc	cgcgcacggg	cagaaggagc	35400
agggttgggg	gctggccccc	gggccgcgcg	gccaggcggt	tcaaagcccg	caacatgaca	35460
gctagcgcct	gegeeetgte	cggaagtggt	cgaggagcat	cacgggaatc	tectgteece	35520
gcccccgtag	gcggagctct	tgctgtctgg	cccatcgcgt	. ccctggagto	tcgggtagag	35580
tgggagggto	gaggggcacc	ttggagacca	cagttcgctg	ggctgtattg	cccgccaatg	35640
acagctacaa	caccaggcgc	: tcttgcctac	: ttgttcacaa	a gcttggacac	: cgccccaaag	35700
cgtgtggtto	tctggcccac	: cggtggcctg	g tgtaccctto	c cagggctgat	gcaagaaatt	35760
ctgagcttct	agctacttaa	a gttaggctta	a cacttcctct	t ttgagtaago	gttctcctga	35820
tgcactttaa	a actttaggtt	tgcaatcga	g caacaaacc	t tttccttgca	a ttgcactgcc	35880

ctgttgtggt	cttgggcagc	tctgcaatta	attgccagag	ttctcagtat	cagtgatcac	35940
ttgttttcta	ctgggtggcc	tgtgtgaggt	gacgcttgtc	ctctttcacc	tgagccgggg	36000
tcttcccacc	ttgagaccat	ttatgaagct	tttaaagtac	tatcttcctc	tacaatgaag	36060
agaaacagga	ggcagtgcag	ggcagagagc	atctgtccca	aaggtagatg	gctctcctct	36120
gggagagttg	ttggtaatca	gaagctgacg	gtgagggcta	gggaactgaa	gtctcatcct	36180
actcattagt	gttgtcaaca	ccagattctg	cagagaatct	gcacttagga	gggtctgagg	36240
agcctgggct	gactgcaata	cctgatattt	ctcagaagag	aacagagtct	gcttacatcc	36300
ttctcccaac	: ttccaggccc	gtaggaggcc	cagccagcac	cctcttcctc	tcatctcacc	36360
ctaccctgga	a gtgacacagg	gttgctctga	acatcaggga	acgtggcact	cccatccttt	36420
cttgcaacaq	g gtctcactat	atagctccgg	atggtetgte	acttacaatç	, tatatcagac	36480
tcacaagag	g tccatctgcc	: attgcctcct	aaatgctggg	g gttaaaggca	a cataccacca	36540
cacctgtcc	t aaacctttct	tcttcggggt	catcctagat	aaccagtato	c tcatttcaga	36600
taacttcag	t gtctgggcaa	a agagaatatt	tctatggtg	t gggtcattc	c tagaggette	36660
ctaaccttg	c tggctctgad	gttctctcg	g ctggtcagg	t ctactcatc	c ttctttcaga	36720

gggtttcata agttgtaaga gatttaggcc tacggtggat gaaagatgtg gagtcatttt 36780 gagtagctaa tgctacagaa ctagaaggca ggttctctgc ccccttctct gacctgttgg 36840 ggaagtggaa gtaactttcc atttgtgacc ttccccacta ggtggcgaga tagaattgtc 36900 aaagctggga aaggaggctt ttctgggcag ttcatgggta gaaggacaga cagacagagt 36960 tggaggaatg gaagcctcct catttaccaa ggggtaaact atggatgagg tgacttcagg 37020 tgcctgcagg accctatgca gacggtccca ggatttaatg atcaggccat tctatttcct 37080 ctggtgtcaa atccagtgat atcattaaaa caaaaacaaa aaagccccaa tcagggtctt 37140 acttgatggc cttatatttc caacaaagcc caggctggcc ttgaacttga agcaatatcc 37200 ctgcatctgt ctccagagtg ctaagattgt gtgtgtcacc ataccaaggt acagtgatct 37260 cttgaaacag ggaggtgcaa gtcattactc aaacccctcc tcacaatgtt ctatgagcaa 37320 atccgaagtt gatgttggct tttaaagtca ccagacaagt gtccttctgc ttagatcttc 37380 ctaggaactg aggtttgaaa caaaaagcat aacatggttg gagagatggc tcagtagtga 37440 aattctgaat gtggttccca gcatccacat tgggcacctc agaatggcct ataacttcaa 37500 ttctagggac caagtaatct cttctggctt atgggtgtca ctcacatgca tgtgtgcata 37560

tggtgcctaa	gtaaaaaaat	aatcttttaa	aagcagattt	taaaaaaaat	ttcaacgatt	37620	
tttttttaat	gttcattggt	gttttgcctg	catgtatatc	tgtgtgaggg	tgtcaggttt	37680	
ccaggaactg	gagttacaga	cagatgtgag	ctacctgttg	gtgctaggaa	ttgaacccag	37740	
gtcctctgga	agaataatca	gtgctcttac	ccactgagcc	atctctccaa	cccaaataca	37800	
tcttaaaaaa	aattaaaaca	gtggacctgc	cttctagttc	tgtagcatta	gctactcaaa	37860	
atgacccaca	tctttcatcc	accgtaggcc	taaatctctt	acacttatga	aaccctctga	37920	
aagaggatga	gtagacctga	ccagccgaga	gacatcagag	ccagcaaggt	taggaagcct	37980	
ctaggaatga	. cccacaccat	agaaatattc	tctttgccca	. gacactgaag	ttatctgaaa	38040	
tgagatactg	gttatctagg	atgaaccccg	agagaagaaa	ggtttaggac	aggtgtggtg	38100	
gtatgtgcct	ttaaccccag	catttaggag	gcaatggcag	g atggacctct	tgtgagtctg	38160	
atatacatto	g taaaggggag	aactcccgga	atttgttctc	c tgacctacac	: atgtgacatg	38220	
catgtgttcg	g tgcacacaca	ı catacacaca	cacacactgt	: aaaaatgcaa	a aatggctacc	38280	
aagtggtca	t tgagcttctc	aacctcacto	g acagetaca	t tattatatag	g acttactggg	38340	
aacagatcc	g caggaaatta	a tttggaatct	ttttcttt	c tctaacgggg	g gctgatctgg	38400	

aacttctgag	cctttttgtt	ccctatcatg	aatgctggga	tggcaggcgt	ttccacatga	38460
ctcgttcgat	gtagtattgc	agactgaacg	caggactttc	cacacactaa	gcaggcattc	38520
tgtgaactgt	tacgtctcca	gccccatttc	taaattctaa	caccaaagtg	ctagttttgt	38580
cccttgacct	ggacactgca	gtgagttcac	agaacttata	atcaccctgt	ttagtgtaga	38640
agctacctca	atcaccatga	catttttcaa	aaatgtgttc	actttcctct	ttagagtcca	38700
agcacaccaa	gcttggcgga	acaatgatac	agtctaactg	gatctgtttc	aaaattgcaa	38760
cttgactcta	catctaaata	ggtatgtgtt	gtgacaagtt	tattatgttg	tgtgtgtgtg	38820
tacacatgtg	ccacaggaag	ccaaaggaca	acttgctaga	gtgcattttc	tttcctggga	38880
attggcctct	ggttgtcagg	cttggtagca	cgcactttga	ccctctaago	catcttgatg	38940
gcccagagag	g tgaaccacgo	tgttttcact	ttcctacttc	ttgggctgaa	ttctcaagta	39000
cctgcccttg	g cagetttgea	cccttcctaa	cttcaaaagg	g aaactgacat	ggagaagggt	39060
gatacttgaç	g gatttcctgc	g ctcacttago	: tcaggactct	ggcctaagaa	a cagggaaccc	39120
agcagtgtga	a acaggggtco	c aagagagtto	c atttgtactt	accggcaaaa	a cagtgtggca	39180
ggcttcacad	c aaatacata	teggeaceag	g gacagggcca	a ctctggatg	g aggtgggctt	39240

aggtggggta	ctgcccaccc	agggttgtcc	tctcttgtaa	gcagactcat	ggggacagcc	39300
cagaagtgat	cccacagtct	ctctgaagct	gacaataggg	gataattcta	agtcctcatc	39360
ctgtgctcat	ccacagtcct	ttgtcgatct	ggacactact	atcatgggct	gctggaaaca	39420
ggtctttgca	gcccaagtct	gagccactag	ctctgctttc	actgccagcc	attaacctcc	39480
gggagtgggc	gtgggataag	aagaaacatt	tatagagtca	acggccaatc	tgtatttggg	39540
ctgaaaacca	tattaaggaa	gggccaagcc	tggcataatg	gtgaccagag	ccactagggg	39600
accaactgca	cccagcttta	gcaaagtgac	aggcagcatg	aggtaccatt	atgtgtgctg	39660
ggcatgcggc	ttcaggatgg	ctctgtgacc	tcctagaggt	tgtcttattg	gcaggcatag	39720
gaaacaaagg	cagagaatga	atgctacagc	: cagagagacc	cagatctgct	aagtggatga	39780
ctcttgtaca	tatgtgtgta	tgttgtttt	gaggcagggt	ctcactgtgt	agctctgact	39840
gtcctggaat	tggatctgtt	ggtctcaagt	tcagatccta	gtggtttatt	tttcctgtgt	39900
atgtgtgctt	gtcatgcaca	a agcatgtgtt	aaggtgagta	gatatgtagg	g cacatggaga	39960
tcagaacaat	ggtgtcacto	c caaaccttta	a tagacctata	tccatcttga	ı cattagggtt	40020
acaggtgtg	tcaacataga	a tatggccaaa	a atttaatgtg	ggttctgaag	g atctaaatat	40080

gtcttgtgct ggctagttct acgtcaacct gacacaagct agagttatct gaaggaaggg 40140 aaccttagta gagaaactgt ctccatgaga tccagctgta tagcattttc ttaattctta 40200 gttagagact aatgggggag ggcccagtcc attgtgggtg atgcaacctt agacaggtga 40260 acctgggttt tgtaagaaag caggctgagc aagccatgag gaagcaagcc agtaagcagc 40320 actgaccatg gcctctgcat cagctcctgc ctccaggttc ctgccctgtt tgagttcttg 40380 tectgacete etteegtgat gaacagtgat atggaagtat aaccaaataa acceteteet 40440 cccaagttgc tttggtcatg gtgtttcatc acagcaacag aaagcccaac tgaggcaggt 40500 tttcatgctg tataacaagc tgaaccatct taccagctcc atagtgttta ttttaaaaga 40560 tgagtgtgta actttccttt ttttcctttt aaaaatccaa agaaccacgt tcctcaggaa 40620 aagctctggg ccagttctcc tggtaacttt gaagtctttt taaaggcaga gtctatgtta 40680 gacaagetgg ceteaacete acagagatea cetecetetg ceegttaact geetggtgag 40740 ctacaatgtg tttttaaaga tgtccctgtt ccctcttaaa caactccaat ttcacccatg 40800 tgttcccatt tggtaggaca ggaagccatt tgttcatcat gaagcttctg ctgatgtcag 40860 gacaggegeg egegegeaca cacacaca cacacacage agetttagte atttgtggte 40920

agctgggaaa	atgggaaaac	acggttggag	ctgagttgaa	ctgaagagtt	ggtggagaca	40980
catggtgcaa	atcctgagca	gtagctgaag	gaaaggtaca	agtttggcag	tagattggcc	41040
aatgaggtgc	agagataaag	cagaagggct	gccccgagag	ctgcagcatg	gtgcgtggaa	41100
cccttcagga	ggtagaaagg	tagaaagggc	tgcttggact	actagtgtgt	agattactgt	41160
ctttcagcag	gtgaaagaca	aggctagagc	ctgtgattgg	acagtagaaa	aggagggcgg	41220
gctgagagtt	tgagagtctg	gagggatagg	aggaaagaag	gaagatggag	gaagagaagg	41280
atgacccaga	gctgtgtggc	tttaaatagc	cacaggtagc	tatgaatatc	atataagggg	41340
tggattatga	caggacaatt	tgtccactca	aggtgggcag	cttatatcat	attaattggc	41400
tctgagttct	: ttgtcttggg	cattttgtga	gctgagaatt	tactgatata	aatctgactg	41460
ataaattaca	agcctctaga	gttttgattt	tactgggtta	cagggatttg	g tgacagttaa	41520
ctgcgagatç	g ctacagccag	g agagacacgg	g attctgctaa	gtagatgact	cttgtacata	41580
tgtgtgtatç	g ggggctagct	gtgaaggcag	g tgaaactgct	gccagggcca	a gagagtagtt	41640
ggcactact	g tgggatggt	g catccattt	t tttaaaaatt	atttaatgca	a acactagtga	41700
gtcatccag	t aggaaatgc	t ggggtctgg	g gagctggggg	g tggaggaaa	g ccacaagccc	41760

acggagcccc	agatccccca	cctctttgga	gaataacact	gatatcagtg	actcagacac	41820
aatagatctt	ggggttcagc	acccaagctc	ctctagtaag	catgggtgca	aaaggtgtgg	41880
aatggagagt	gaaggaagac	tttttcataa	gcctgtcaca	aatgaggagg	aagctaagct	41940
tgggaaatgc	aggccttcag	tggcagacca	agtggagtca	atgaagtaag	gtctgagtag	42000
aagggctctg	ggtgtgcgct	tcaggctggg	tgcacacttc	tttctgagga	aatgctcact	42060
tccactttga	ccattccctg	acccaggtca	tagctgatgt	gccagagtgt	catgggtgaa	42120
gtggtcactt	tegetettte	cacacaactg	tgctgtgtaa	gacacccttt	ctctggtcat	42180
acaggagtco	cctgtggggt	ttgagccctg	acttaaaaag	aaaggatgag	ggctacttct	42240
gtggaaggga	gcaaagagca	gaggtcatto	ctgctggagg	agatctgcta	acaagcatgt	42300
gatgtttaac	: attaagggct	gctcatcaag	ı tcagcactga	ctccagcaga	gtcctgtcga	42360
ggctactcca	a gtatgccctg	gtcaagacta	ı gccttggcaa	gggagcagcc	tgggctgttg	42420
ctaggtggat	agaagcacac	: acagaggatt	: ttcttagtgg	g tgtatgtaat	: cactgaggtc	42480
ttgctgacco	c agtaggcata	a ctcctccatt	: gctagactca	a gtcacacaaa	a gtgtacaaga	42540
acagggcat	t cttcatggaa	a aattcctga	c tgggtcttt	agagetecaç	g ttcctagagg	42600

ggcagatgat cccagtgact tatgctcagt gtaaagctgg tctgctgtca catctttgct 42660 cccaaaggtt tctgggattc ctcctgtact ttcttctatt tttattttca agacagggct 42720 tetetgtgta gteetggetg etetggaact tgetetgeag accaggttgg ceteaaattt 42780 atagagatec acttgeetet geegteeaag tacagggatt aaagttgeat geeaceaetg 42840 cccagcctct ctaaaatttt cttaattaat ttattttca agacagagtc tcactatgta 42900 gtcctggata tgctggaact cagtaatgta gaacaggctg tccttgaaca tacagagttc 42960 caccaacctc tgcttccaag tgctgggatt gaagtgtgtg ccactatgcc cagctaaaac 43020 ctgttttatt ttctgtgcat gggtgtttgc ctgcatgtat gtctgtgcat catttgcctg 43080 actggtgccc acggaagtca gaggaggaca ctggatcccc tgaggtgccc acggaagtca 43140 gaggaggaca ceggatecee tgeagtgeee atggaagtea gaggaggaea eeggatetee 43200 tggatctgga tgactgagcc atcacatggg tcttgggaaa agatcccggg tttgctctaa 43260 gaacaagtgc tcttaatgat tgagatgtct ctctatccca tgtttctttg tacacaaaca 43320 ccatggacac gtggcataca ctgggcttcc ttttcacacc actctgtcga acttaaattc 43380 tgctggcggc tccaactgac ctttcctttc tattcctaaa ttctcggcat ggcttgggtc 43440

tggttaagtc	ccccttttc	caagcagccg	gaagcactta	tctctgaatg	tgcctctgtg	43500
ggacacaccg	ggggacctgc	tgaagcctct	gaagagcaga	ggtgatgtct	gcctccccat	43560
ctttgccctc	ttgtgctaag	aagctacttg	tgatgctgga	ggtggtgggg	aaaacccacc	43620
agccttgcca	cctgaagtga	agggcagcca	cggcctgtgt	cctagccagt	ggggattagt	43680
gaaaatggta	aagtgggcaa	cgaggctgct	tgctttctga	gcttcctcct	attttgggtt	43740
ggtagcagca	gcggcccagt	tccttcccac	tgtggggatg	aggagtacgc	cctcaggatg	43800
ccggcatcag	agaaggcaag	aacagacgca	gtgtcgcacg	tcttcaatta	cagcacttgg	43860
gaggcagaga	caggcagatc	tctgcgagtt	caaggccagt	ctggtctaca	cagtgagttc	43920
taggttcgtc	tgtgttacac	agggagaact	gtctgaagaa	acaaacaaag	agaaaattaa	43980
agttagatgt	agtggcacgg	tcataatcta	ı aaatgtggco	: tagctgttct	ctgttctctg	44040
tttctctttc	: tteeteecte	cctctctt	cttcattgto	tgtctgtctg	gtgcttgtat	44100
atcaaaatgt	aagttctaa <u>c</u>	ı atatgettea	a gcaccgtgco	tgcctgcctg	g ccgccatgct	44160
ccaccatgal	agtcatagac	c ccaccctctc	c gaactgtgaa	a tcccaaattt	actttcttct	44220
atgagttgc	c ctggttatgg	g tgccttatc	a cagcaacaga	a gcagtgagta	a atatacccac	44280

cacacataaa taaatacatc teetgaagaa aatttaaaag ttateetgga cagaaactag 44400
agaggecaga etggeeteag etcaagecea cageagetee teetgteetge tgteettee 44460
tgtaggaagaa teeagtgaga eccaagetgt etgteetag getataaget gggagtgg 44520
etgggatgac cacacttgat agaaaagagg aaaaggaact gggagttgeg geegee 44576

- <210> 18
- <211> 23
- <212> DNA
- <213> Artificial
- <220>
- <223> SYNTHETIC PRIMER
- <220>
- <221> misc_feature
- <222> (1)..(20)
- <223> SYNTHETIC PRIMER

```
<210> 19
```

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(20)

<223> SYNTHETIC PRIMER

<400> 19

cgaagaactc cgcagggtcc

<210> 20

<211> 18

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

```
<221> misc_feature
```

<223> SYNTHETIC PRIMER

<400> 20

aagacccgcc acgacccg

18

<210> 21

<211> 20

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(20)

<223> SYNTHETIC PRIMER

<400> 21

gaatcagcac cctctccgcc

```
<211> 25
```

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(25)

<223> SYNTHETIC PRIMER

<400> 22

tgcggagttc ttcgtgctga tggag

<210> 23

<211> 20

<212> DNA

<213> Artificial

<220>

<223> SYNTHETIC PRIMER

<220>

<221> misc_feature

<222> (1)..(20)

<400> 23

ggtgctcggc ggcgtccttc

20

<210> 24

<211> 21

<212> DNA

<213> Artificial

<220>

<223> synthetic primer

<220>

<221> misc_feature

<222> (1)..(21)

<223> synthetic primer

<400> 24

gagtggcgga gagggtgctg a

21

<210> 25

<211> 18

<212> DNA

```
<213> Artificial
```

<220>

<223> synthetic primer

<220>

<221> misc_feature

<222> (1)..(18)

<223> synthetic primer

<400> 25

ggccgaggct gagcgggg

<210> 26

<211> 20

<212> DNA

<213> Artificial

<220>

<223> synthetic primer

<220>

<221> misc_feature

<222> (1)..(20)

<223> synthetic primer

<210> 27

<211> 19

<212> DNA

<213> Artificial

<220>

<223> synthetic primer

<220>

<221> misc_feature

<222> (1)..(19)

<223> synthetic primer

<400> 27

ctccaacgcc tgccgctgc

19

<210> 28

<211> 21

<212> DNA

<213> Artificial

```
<220>
```

<223> synthetic primer

<220>

<221> misc_feature

<222> (1)..(21)

<223> synthetic primer

<400> 28

gcaggaggag cgggagcagg a

21

<210> 29

<211> 19

<212> DNA

<213> Artificial

<220>

<223> synthetic primer

<220>

<221> misc_feature

<222> (1)..(19)

<223> synthetic primer

<210> 30

<211> 41

<212> PRT

<213> Unknown

<220>

<223> conserved sequence

<220>

<221> DOMAIN

<222> (1)..(41)

<223> CONSERVED SEQUENCE

<400> 30

Met Leu Arg Ala Leu Asn Arg Leu Ala Ala Arg Pro Gly Gly Gln Pro

1

5

10

15

Pro Thr Leu Leu Leu Pro Val Arg Gly Pro Arg Pro Arg Ser Phe

20

25

30

Ser Ala Pro Phe Ser Ser Gln Asp Ser

<210>	31	
<211>	123	
<212>	DNA	
<213>	Unknown	
<220>		
<223>	conserved sequence	
<220>		
<221>	misc_feature	
<222>	(1)(123)	
<223>	conserved sequence	
<400>	31	
atgttg	geggg ctttgaaceg cetggeegeg eggeeegggg geeageeeee aaceetgete	60
cttctg	geceg tgegeggeee aeggeeeege teattetegg eteettttte etegeaggat	120
agc		123
<210>	32	
<211>	19	

<220>

<212> DNA

<213> Unknown

<223>	conserved sequence in mouse	
<220>		
	misc_feature	
<222>	(1)(19)	
<223>	conserved sequence in mouse	
<400>	32	
agacat	aaaa aggtcggtc	19
<210>	33	
<211>	19	
<212>	DNA	
<213>	Homo sapiens	
<400>	33	
aggcat	caaaa aggccaggc	19
<210>	34	
<211>	19	
<212>	DNA	
<213>	Unknown	
<220>		

<223> conserved sequence in Bos

```
<220>
<221> misc_feature
<222> (1)..(19)
<223> conserved sequence in Bos
<400> 34
                                                                     19
cgggcttaaa aggccagac
<210> 35
<211> 19
<212> DNA
<213> Rattus sp.
<400> 35
                                                                     19
aggcataaaa aggtcggtc
<210> 36
<211> 19
<212> DNA
```

<223> construct

<220>

<213> Artificial

```
<220>
```

<221> misc_feature

<222> (1)..(19)

<223> construct

<400> 36

aggcataaaa aagtcggtc

19

<210> 37

<211> 15

<212> PRT

<213> Unknown

<220>

<223> conserved sequence

<220>

<221> DOMAIN

<222> (1)..(15)

<223> conserved sequence

<400> 37

1

Pro Arg Pro Arg Ser Phe Ser Ala Pro Phe Ser Ser Gln Asp Ser

10

•		